

8¹² can't be sufficient



THE MINING CONGRESS JOURNAL

VOLUME 8

NUMBER 11

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v. 8
no. 11

Needed—A Coal Leader

THE coal industry of the United States is altogether the country's most important industrial unit. The nation's great prosperity has been based upon cheap power developed from the cheapest coal which has been available anywhere in the world.

The marvelously effective functioning of the coal industry in the past is a complete answer to the continued present-day allegation that the coal industry is not functioning properly. The fact is that the coal industry has functioned so well for the general public that it could not at the same time function with fairness to the coal operators themselves.

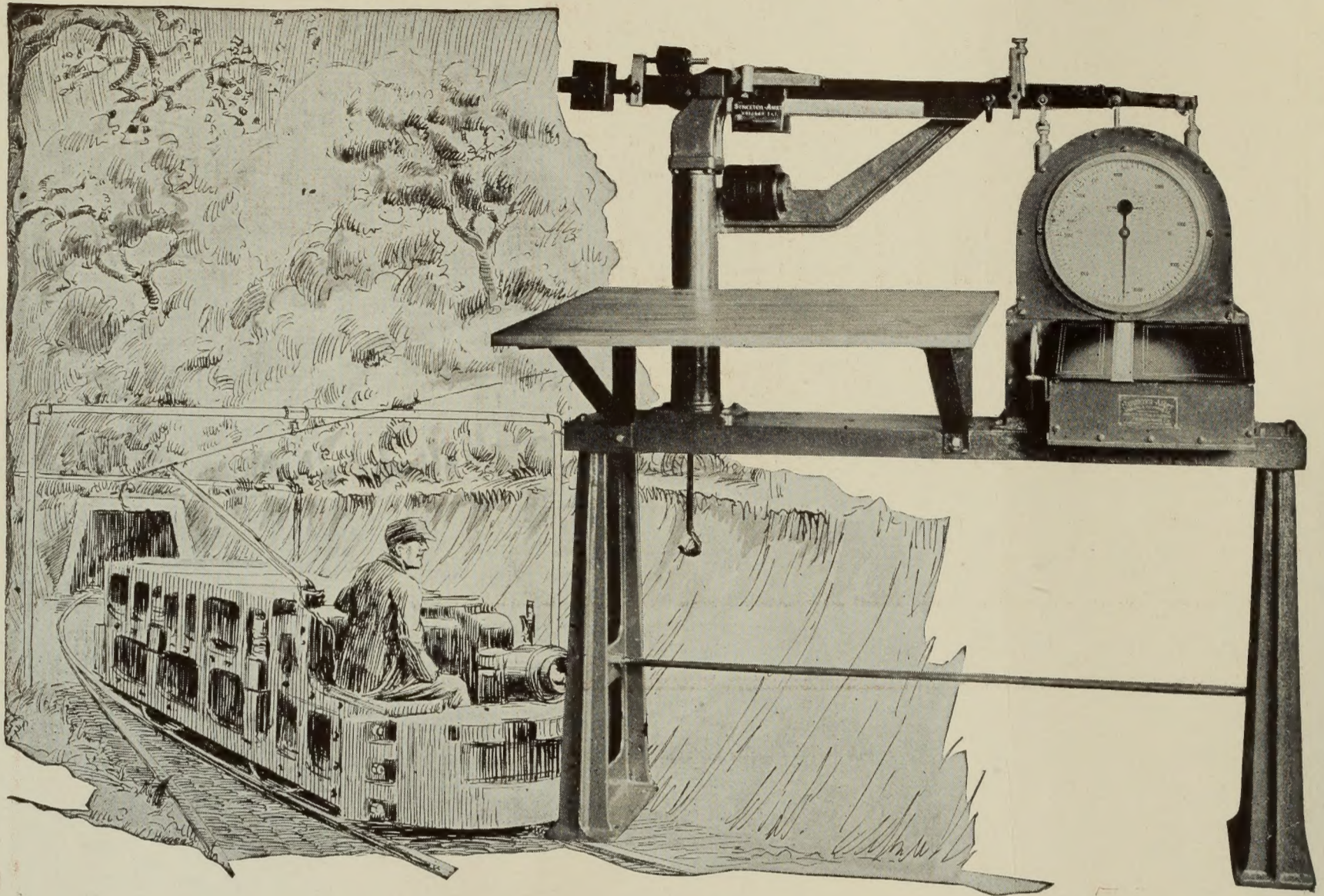
The coal industry has so functioned as to give to the consumer (and we speak of average and not special prices) the cheapest fuel in the world. It has functioned so as to give to the workmen engaged in coal production the largest wages that are paid for similar service anywhere in the world.

In furnishing cheap fuel to the consumer and enormously high wages to the miner, the coal industry has functioned almost too well for the public, but as it relates to the coal operator it has not functioned as it ought nor will it function as it ought until some leader is developed who is big enough to understand the whole problem, strong enough to command the support and following of the now distracted factions in the industry, and aggressive enough to make his plans effective.

Such a leader, whether he be so acknowledged, whether his right to fame be admitted, will be one of the greatest, possibly the greatest, industrial leader of the age.

ENGIN STORAGE





Weighing Service

Accuracy, definite records, knowledge instead of guesswork are details of weighing service that every operator hopes to get from his scale equipment. But with the human element which enters into most weighing, these desirable results are often hard to attain.

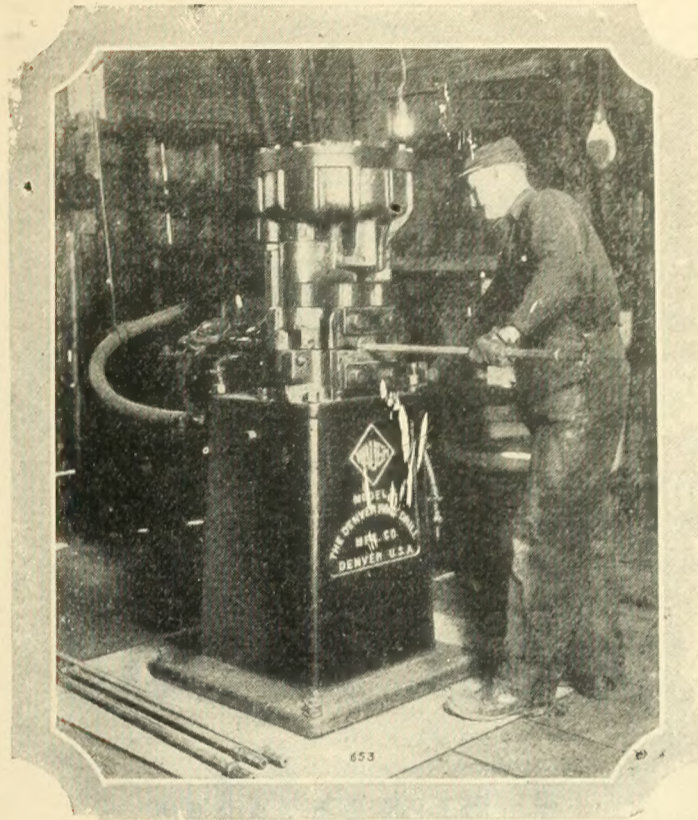
Hundreds of large coal companies have put their weighing on the basis of knowledge and accuracy by using Streeter-Amet Weighing and Recording Machines. The element of human fallibility never interferes with accuracy. Cars cannot come too fast, and the machine never delays production by tying up cars at the scales.

Economy and accuracy are only two of the details of value in Streeter-Amet equipment. May we point out the others?

Streeter-Amet Weighing and Recording Co.

4101-4105 Ravenswood Ave., Chicago

"The Waugh Way Wins"



"Full Speed Ahead!"

NOW that the mining industry is once more beginning to hum with activity, this is the order of the day—"Full speed ahead!"

THE place to begin is at the surface and in the blacksmith shop. Full speed there can easily be obtained by the installation of Waugh Model 8 Drill Sharpener which insures a contented blacksmith, faster work, sharper and better bits and shanks, and, consequently, more efficient and satisfactory drilling underground.

WE'LL be glad to send you our sharpener booklet. Write the nearest Waugh branch office today for your copy.

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THE MINING CONGRESS JOURNAL

NOVEMBER, 1922

CONTENTS

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| | Page | | Page |
|--|------|---|------|
| Illustrations | | News—Continued | |
| Albert J. Nason, W. C. Doering, and W. H. Lindsey.... | 1013 | President Harding Declares Industry Must Heed Human Element | 1014 |
| Annual Banquet, American Mining Congress...1016 and | 1017 | Hoover Outlines Ills of Coal Industry..... | 1014 |
| Charles E. Maurer..... | 1018 | Valiant Move Made for Industrial Harmony..... | 1015 |
| W. S. Culbertson..... | 1022 | Advocates Measures to Prevent Tie-ups..... | 1018 |
| J. G. Bradley..... | 1030 | Mining Industry's Power Outlined..... | 1020 |
| Views of Exposition of Mines and Mining Equipment... 1041 | | Explaining the Rubber-band Tariff..... | 1021 |
| Views of Exposition Exhibits. . .1042, 1044, 1046, 1047, 1048, 1050, 1051, 1052, and | 1053 | Discrimination Against Mining Outlined..... | 1022 |
| Col. C. L'H. Ruggles..... | 1054 | Two Thousand Miners' Lives Saved Yearly..... | 1026 |
| Nicholas Longworth..... | 1055 | New Policy Adopted by Roumania..... | 1026 |
| W. R. Woodford..... | 1057 | The Assault Upon Tax Problems..... | 1027 |
| Edwin Higgins | 1061 | Paternalism is on Road to Communism..... | 1029 |
| Editorials | | "Labor Oligarchy" Controls Nation's Coal, is Statement | 1030 |
| Industrial Statesmanship | 1005 | New Mexico Chapter Elects Officers..... | 1030 |
| This Would Fix It..... | 1005 | Future Prosperity Planned for Mines of South..... | 1031 |
| Fruits of Demoralization..... | 1006 | A Slanting View of Europe..... | 1032 |
| The Wide-Open Opportunity | 1006 | Delegations Carry Convention News Back Home..... | 1032 |
| The Rehabilitation of Europe..... | 1007 | Milestone Reached in Standardization Work..... | 1033 |
| The Tax Exempts..... | 1007 | Government Valued Standardization..... | 1034 |
| The Breadth of Protection..... | 1008 | Manufacturers' Division Elects Officers..... | 1035 |
| Industrial Cooperation | 1008 | Tells Coal Industry to Study Itself..... | 1036 |
| A New Aerial Transportation Theory..... | 1009 | Mining Convention Grapples With Issues..... | 1037 |
| Railroad Fuel Priority | 1009 | A Monarch in the Realm of Expositions..... | 1041 |
| The Lure of Gold | 1009 | Standardization Strengthens Nation | 1054 |
| Contracts of Employment | 1009 | "Wildcatting" Seen as Boon to Mining..... | 1054 |
| Government by Injunction | 1009 | R. G. Gensmell Succumbs..... | 1054 |
| Feature Articles | | Oil Shale Men Meet in National Conference..... | 1056 |
| New Day in Western Mining is Foreseen—By Burton Bunch | 1019 | Oil Shale Bibliography and Notes..... | 1057 |
| Coal's Passage Through Fire—By George H. Cushing.. | 1023 | W. R. Woodford Aids in Cleveland Success..... | 1057 |
| Character Study of Representative Nicholas Longworth—By Ira L. Smith..... | 1055 | Use of Bludgeon is Foreign to Coal Inquiry..... | 1058 |
| The Year In Standardization of Mining—By Col. W. R. Roberts | 1059 | Conserve Cheap Gold Ores, is Plea..... | 1058 |
| News | | Mining Congress Aids Argonaut Study..... | 1061 |
| Tangible Results Attained at Convention..... | 1011 | A Correction | 1061 |
| Briskly Moving Program at Cleveland..... | 1012 | National Legislation | 1062 |
| President Loring Unable to Attend..... | 1014 | Statement of Ownership..... | 1066 |

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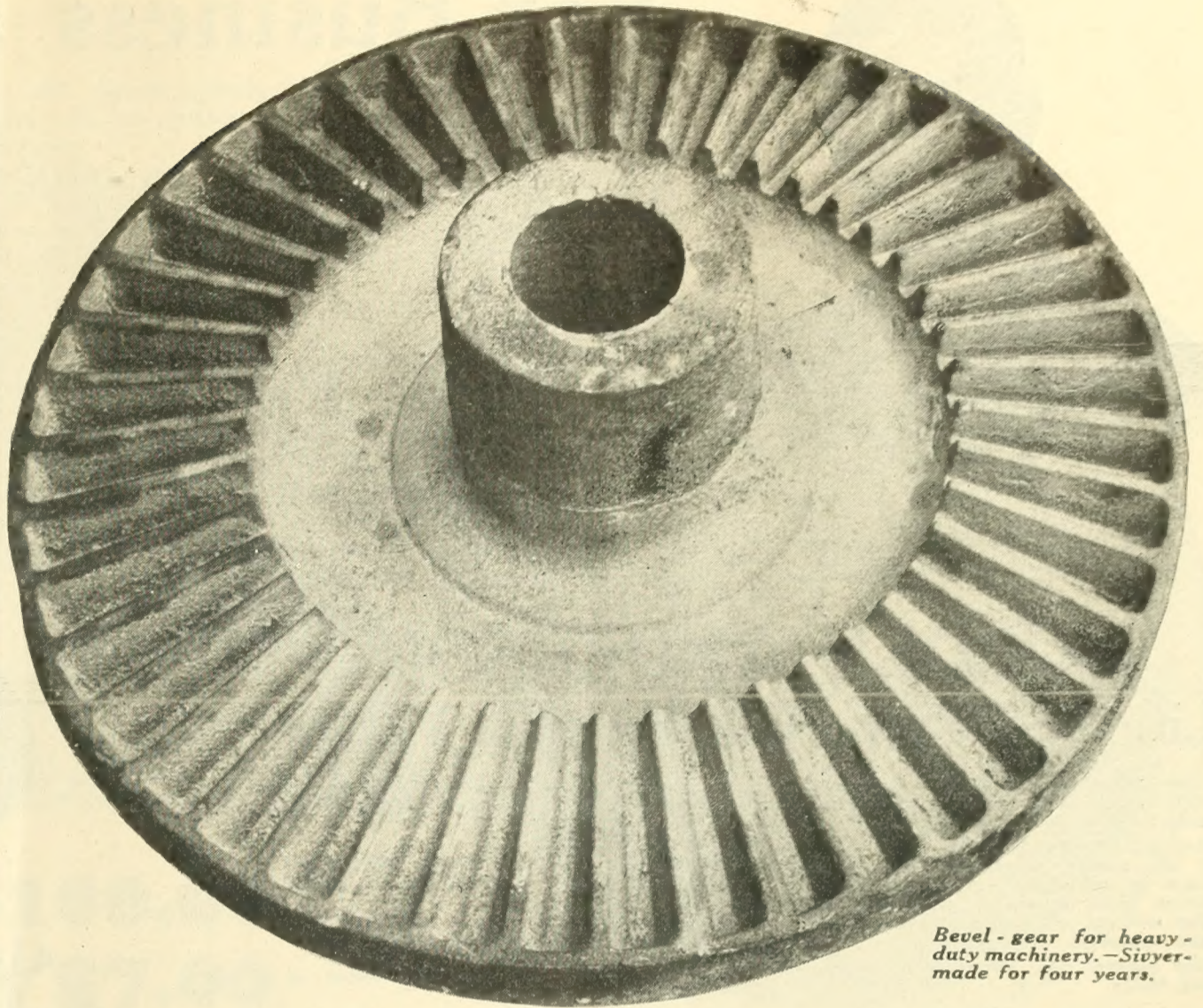
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The Sivyer Service of providing Electric Steel Castings has for its objects the decrease of machining costs and the increase of wearing-quality and life. Both are attained by methods which result from long experience and begin with the design of the casting itself. When we find that a casting we are asked to furnish is of a design not consistent with good foundry practice, we study its function in the completed unit and offer the necessary suggestions to make it a really practicable casting job without affecting in anyway its function and efficiency.

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Fourthly: Sivyer Service analyzes carefully the proper annealing methods to be used and controls their proper application through unfailingly efficient equipment and men. In short, the Sivyer Service supervises every step necessary to secure unusually and unfailingly good castings of electric steel. It never relies on one factor alone, relies very little even on the natural freedom of electric steel from occluded gasses and on its commonly recognized merit in resisting crystallization. It also depends but little on the inherent scientific accuracy of the electric furnace process. From casting-design to sand-blasting and tumbling, the fundamental superiority of Sivyer Steel is due to its men and metal. Their value is best proved by the fact that, although the production of steel castings is generally looked upon as a local one, the Sivyer market is national.



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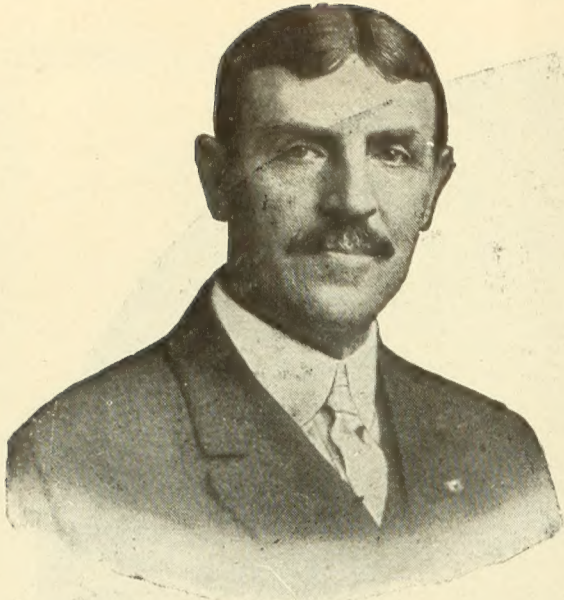
Entrusted to Sivyer for the Past 4 Years

PRODUCING cast bevel-gears for heavy duty machinery provides a stern test for the steel founder's ability. The shrinks and strains that varying sections are likely to cause must be unremittingly prevented. The teeth must be always uniformly true-to-pattern and smooth. The hubs must have the honest surface and interior integrity requisite for economical boring and facing. The steel must be of right and well-controlled analysis to withstand the shocks, strains, and stresses of heavy service. For the typical bevel-gear shown above, Sivyer Electric Steel and Sivyer methods have been so unfailingly satisfactory that this casting has been uninterruptedly entrusted to them since it was first made in 1918.

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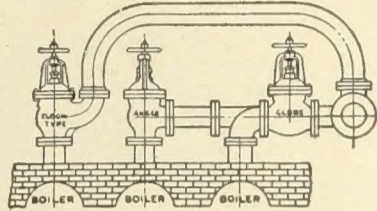


Charles E. Golden
President and General Manager

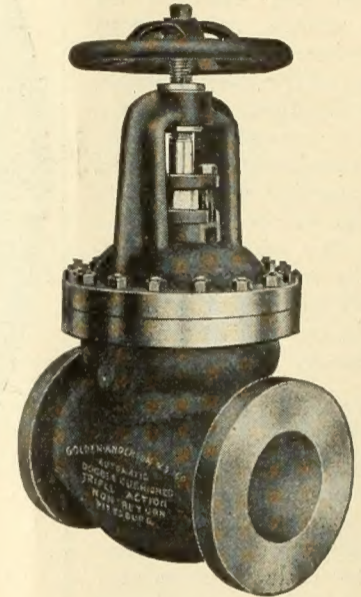
"Aside from SAFETY which always stands first—a plant that is likely to shut down from a PREVENTABLE reason, can hardly be said to be backed by sound business judgment.

"Think of the cost of a shutdown of only a few hours! A few dollars judiciously invested in truly reliable safety devices that PREVENT SHUTDOWN due to back flow of steam or its sudden release through a broken steam pipe are well invested. There could not be a better investment made, when the added PROTECTION to life is considered."

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Automatically cut in and cut out boilers until the pressure between all boilers is equalized.

Automatically cut off steam flow from every boiler—the instant that a steam pipe bursts.

Will not chatter, pound or spin.

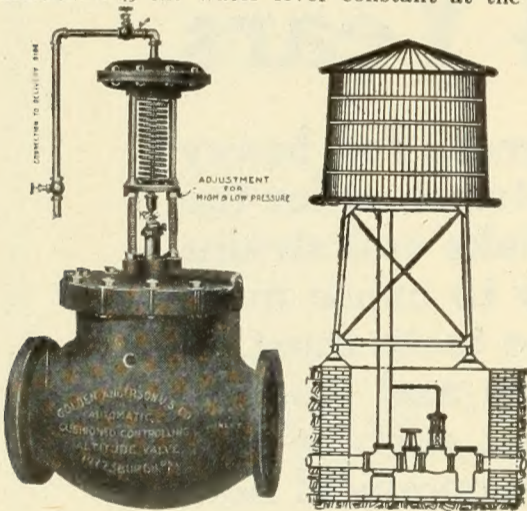
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down overflows of reservoirs, standpipes, tanks, etc., by automatically maintaining the water level constant at the desired level with



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Cushioned Automatic Altitude Controlling Valves

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Three ways of closing.

1. By water.
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Sizes to 30"

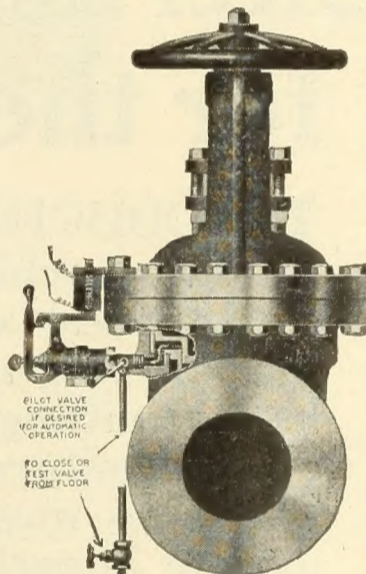
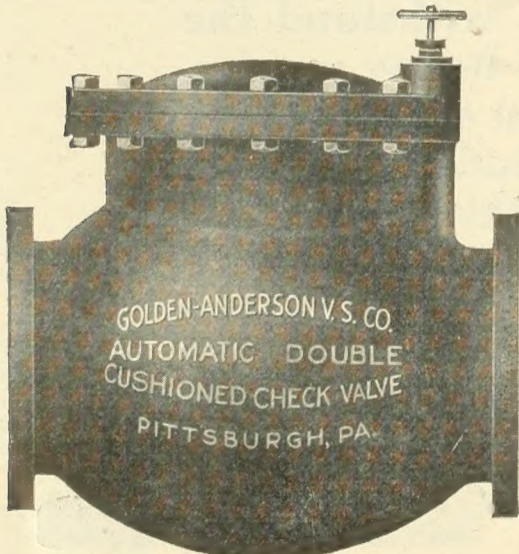
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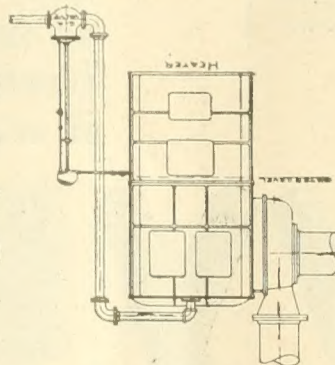
Operated by protected enclosed copper float.

Cushioned by both air and water.

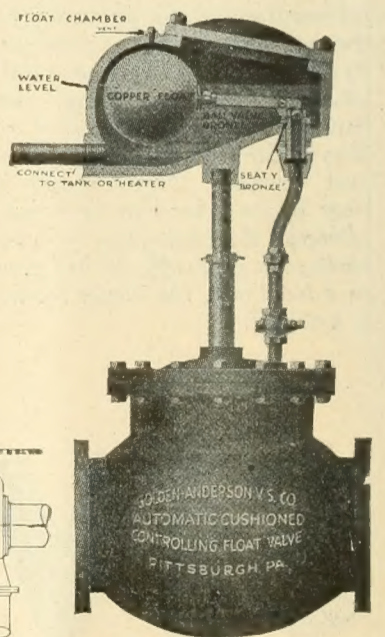
Operate without hammering, sticking or chattering. No metal-to-metal seats.

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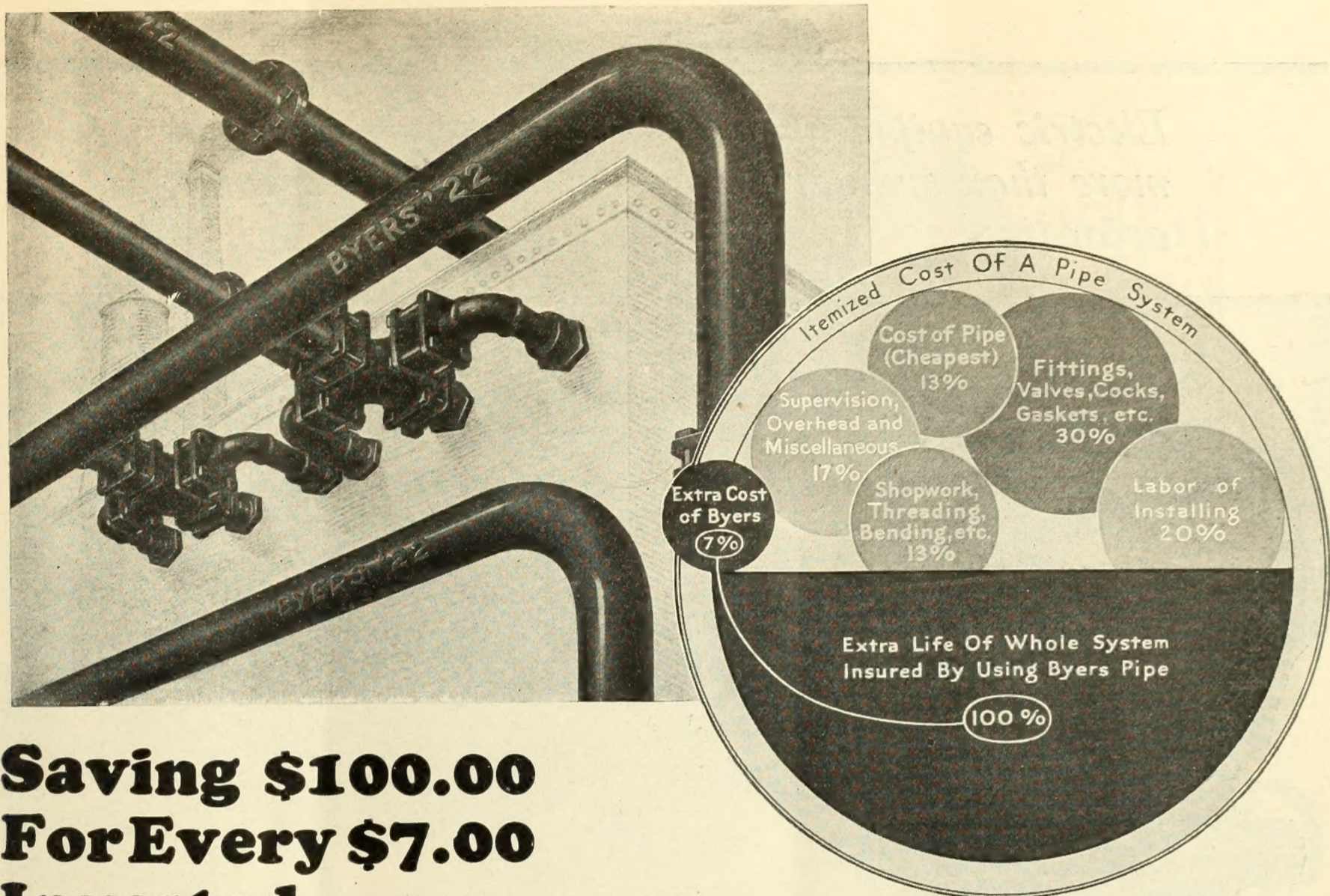
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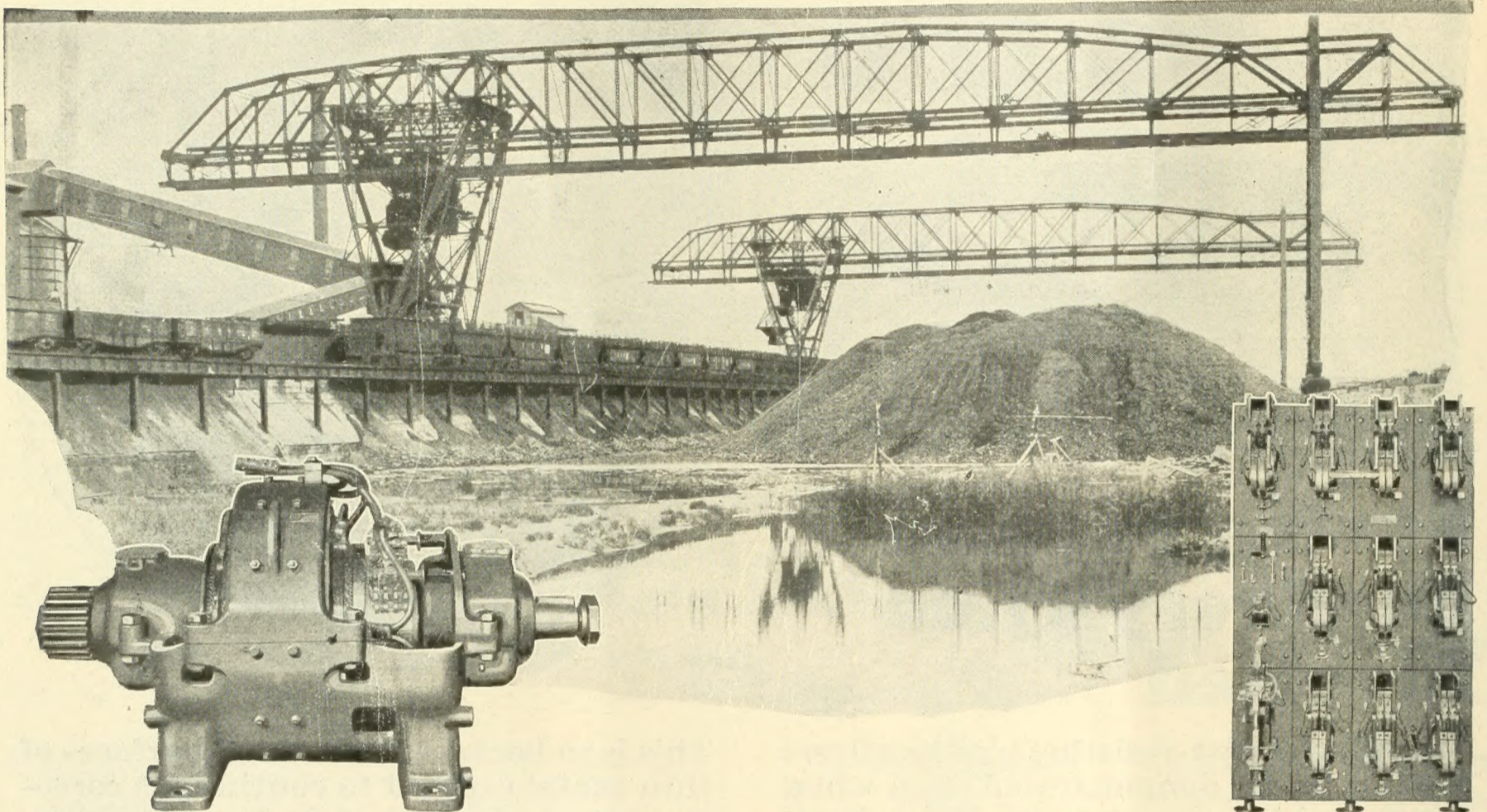
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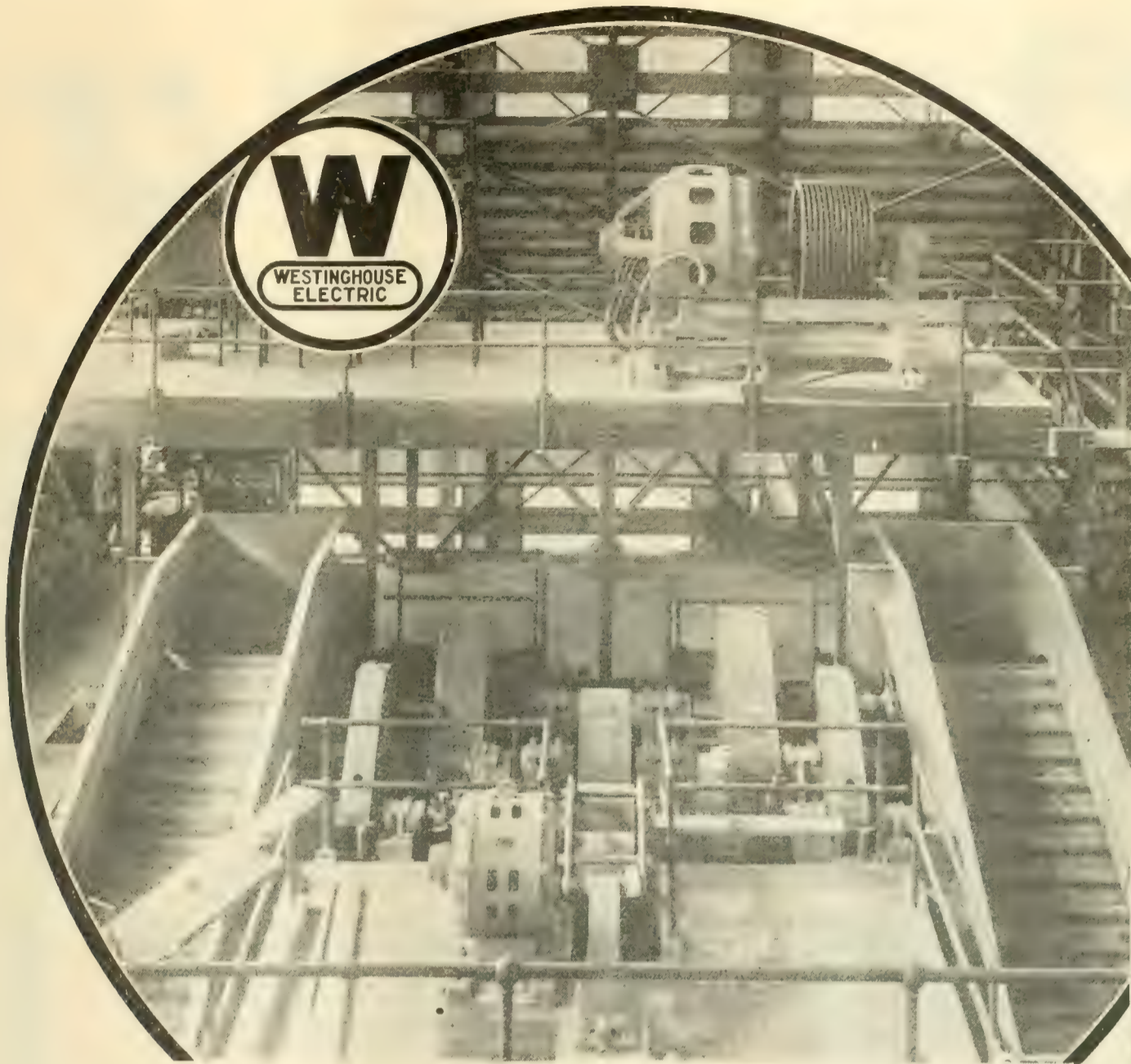
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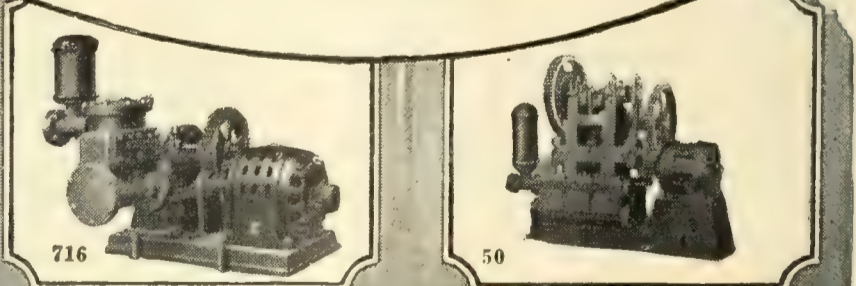
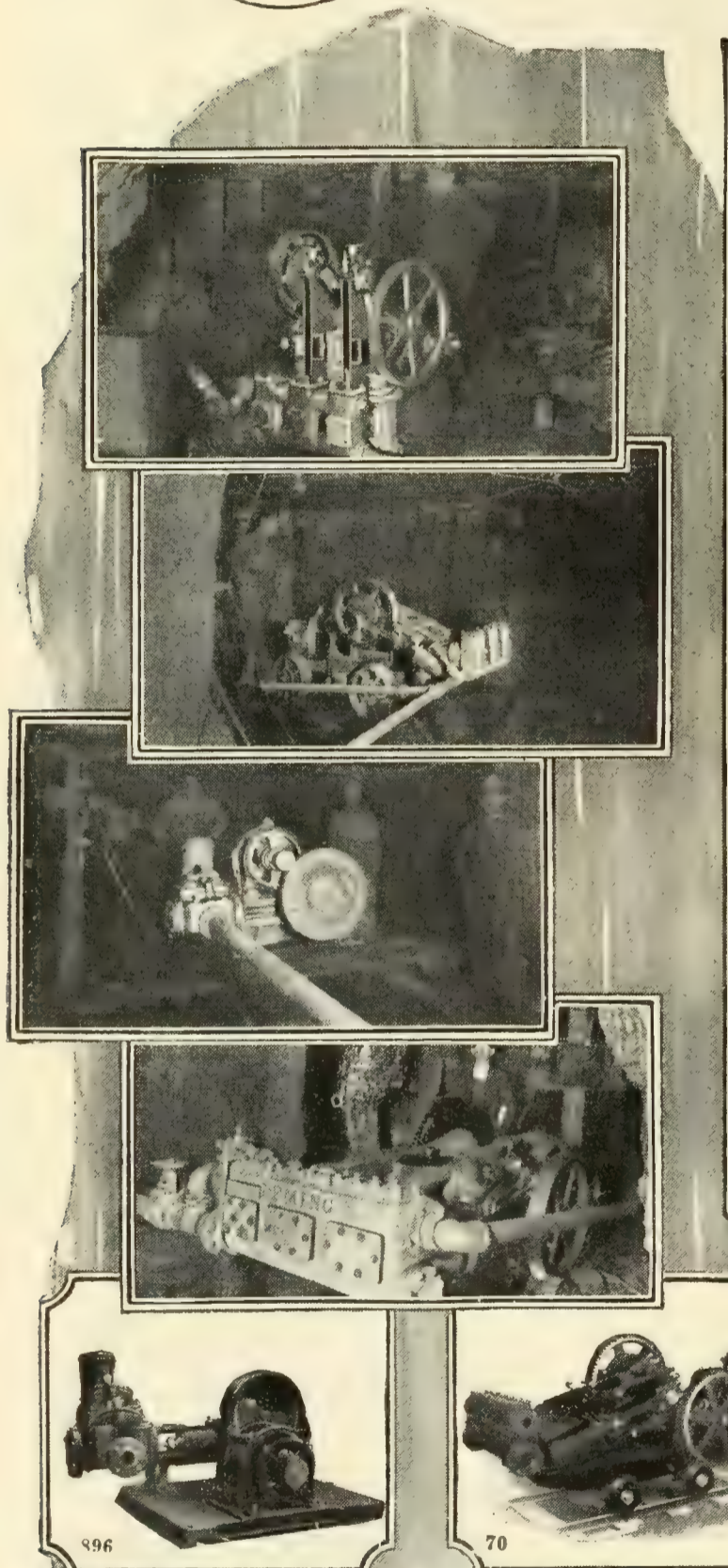
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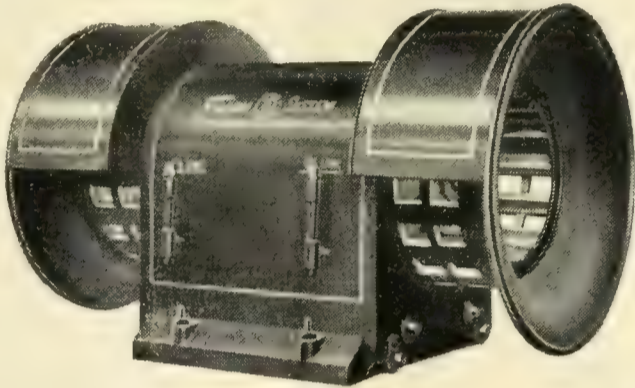


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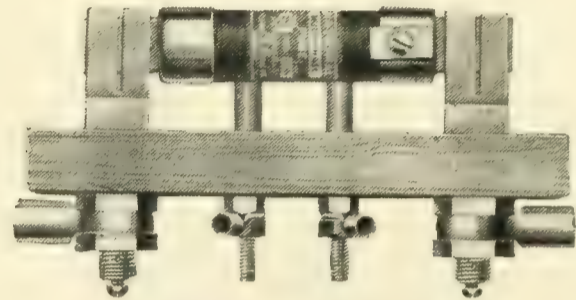
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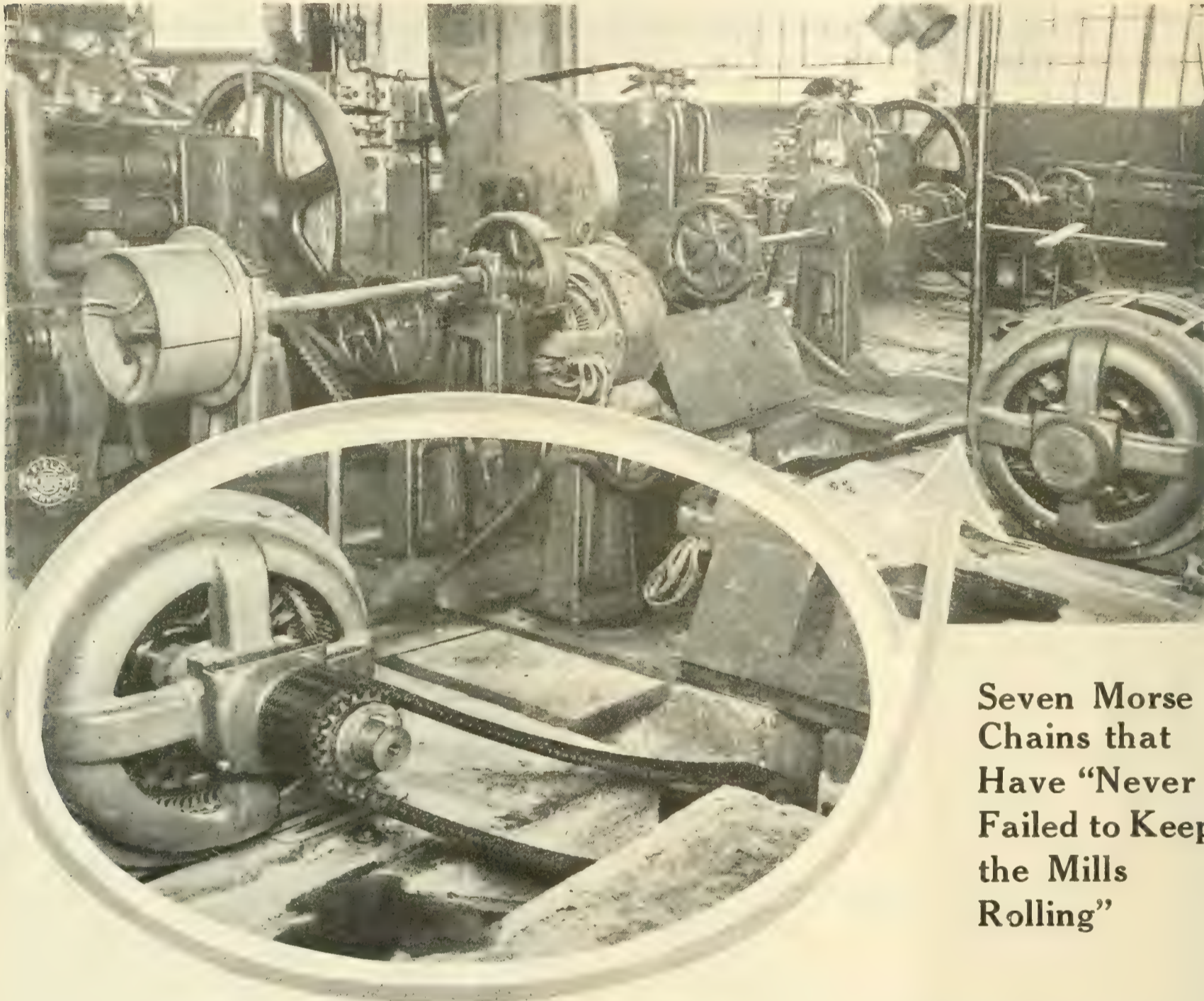
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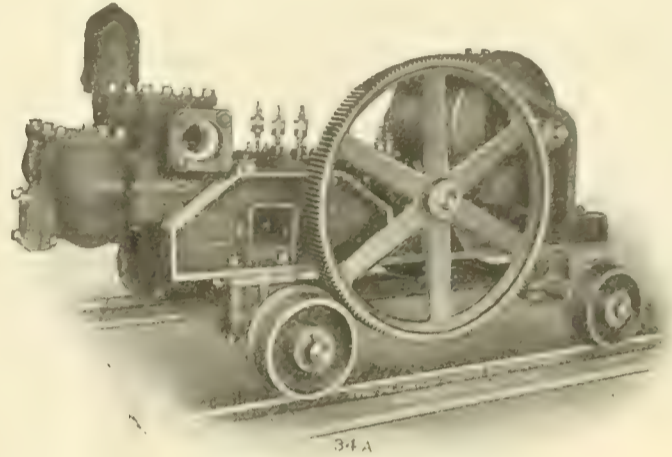
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The ALDRICH LINE includes pumps for all conditions of Mine Pumping Service. Sinking Pumps, Gathering Pumps, Main Station Pumps.

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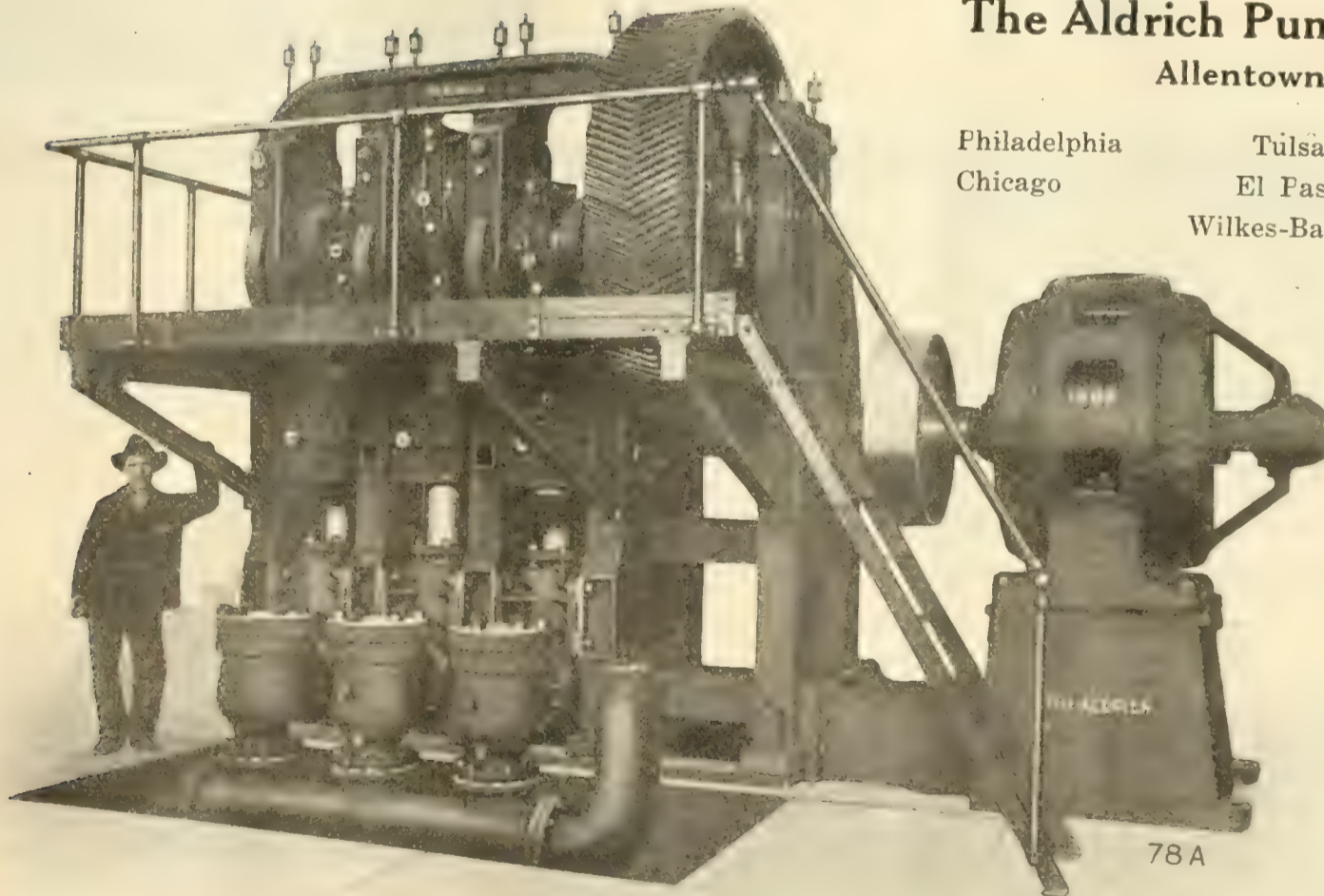
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Allentown, Pa.

Philadelphia
Chicago

Tulsa
El Paso
Wilkes-Barre

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The New Universal Control Shortwall

increases coal production and lowers operating costs.

Its ability to do this is proved by more than two years of service in all coal fields of the country.

Its performance is not really surprising at all, however, because the Universal Control features just naturally assure better results than are possible with any other or earlier machine.

The Universal Control Shortwall has power on both drums, and each drum is geared for both high and low speed. Furthermore, the working speed of either rope, on either high or low gear, may be instantly varied from "no speed" up to full geared speed. Thus the speed is exactly and quickly adaptable to the conditions—constant or varying—of every movement or operation. While the advance represented in the Universal Control features is what has made this machine such a distinct success, there are no changes in methods of manipulation and any shortwall runner can handle the new machine more easily than any of the older types.



The greater production of the Universal Control comes through the easy handling and better speed. Lowered costs of maintenance results from exact adaptability to cutting conditions, and to the reserve of strength and power in the new design.

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Ball Bearings on Mining Locomotive Motors Save 20% in Overall Length

WHERE tunnel width and track gauge restrict the overall dimensions of a motor of given capacity used in electric haulage units, the space sacrificed for long bearings makes it necessary to employ a higher flux density in the iron structure than when short bearings are used.

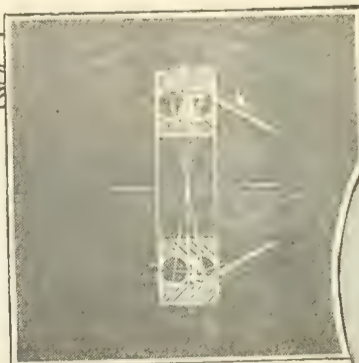
SKF marked self-aligning ball bearings, in saving 20 per cent of the over-all length required where plain bearings are used, permit the designing engineer to utilize this space

for increasing the capacity of the motor or decreasing the iron losses which in themselves are frequently so great as to materially restrict the time of continuous running at full voltage.

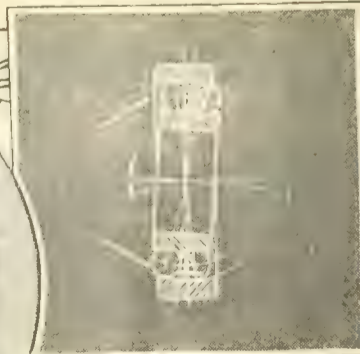
Other advantages which play an important part in motor performances are, the elimination of frictional wear and the exclusion of coal dust and grit from the bearings. **SKF** marked self-aligning ball bearings prove in actual service the ideal bearings for accomplishing these results.

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Normal View



Deflected View



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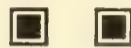
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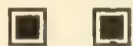


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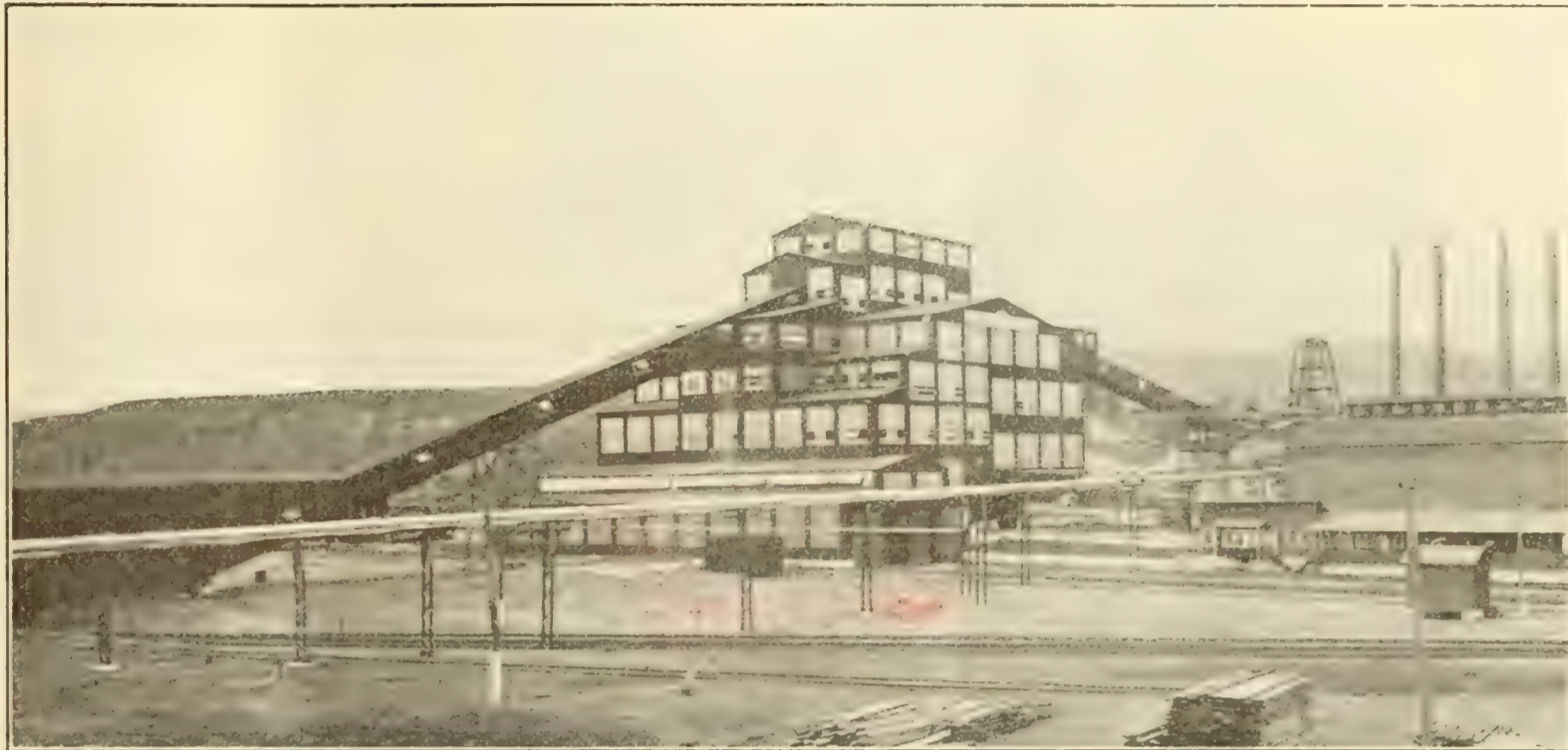
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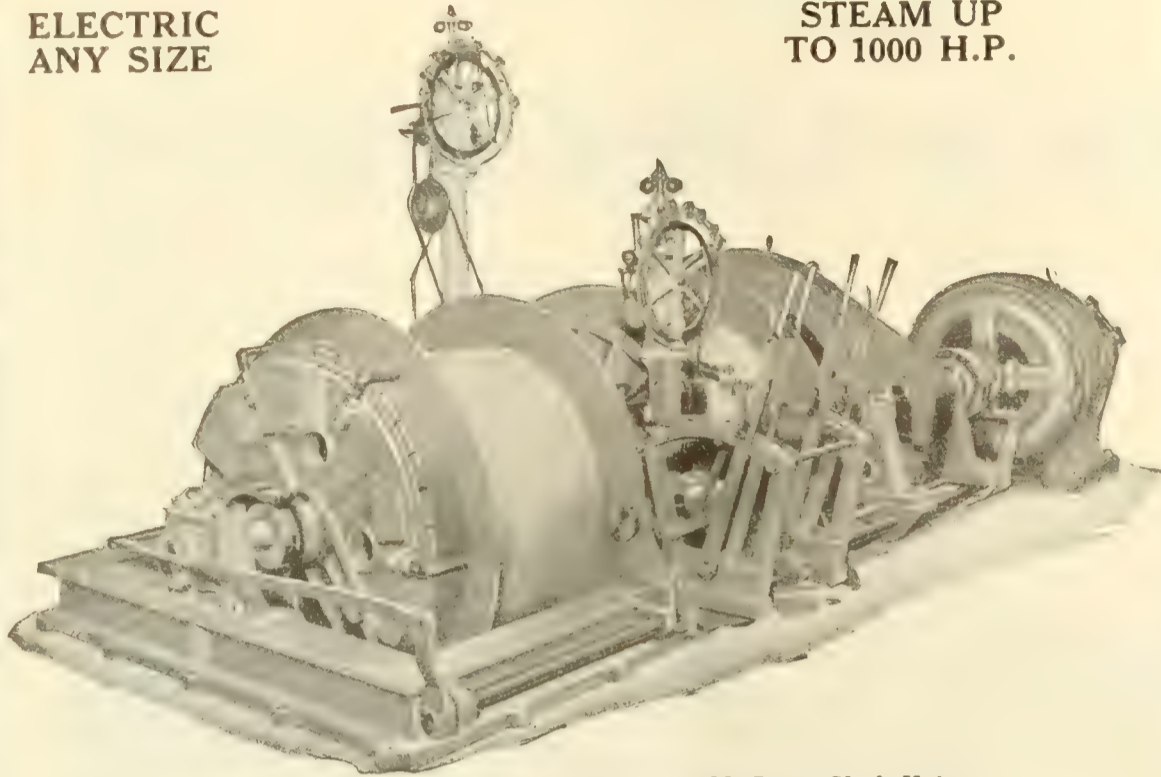
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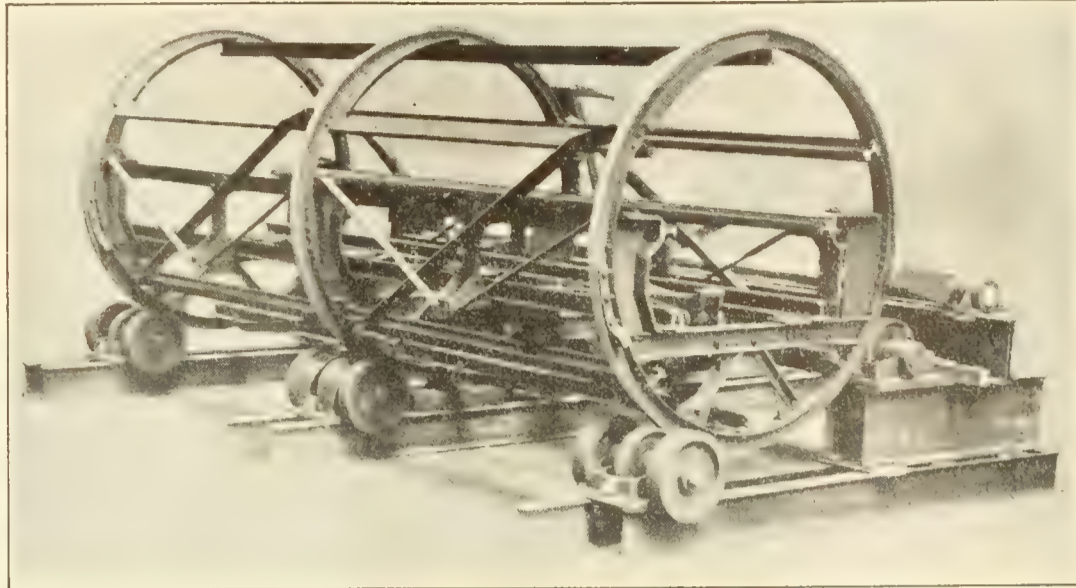
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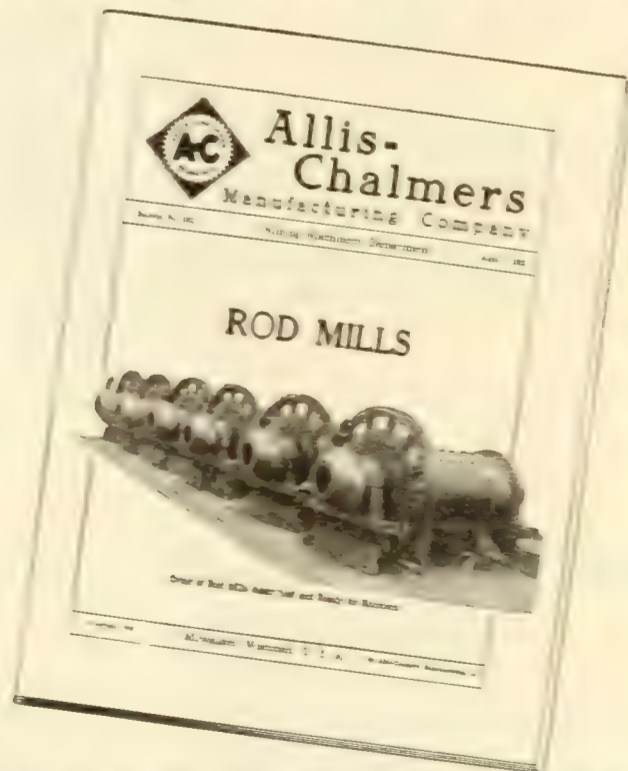
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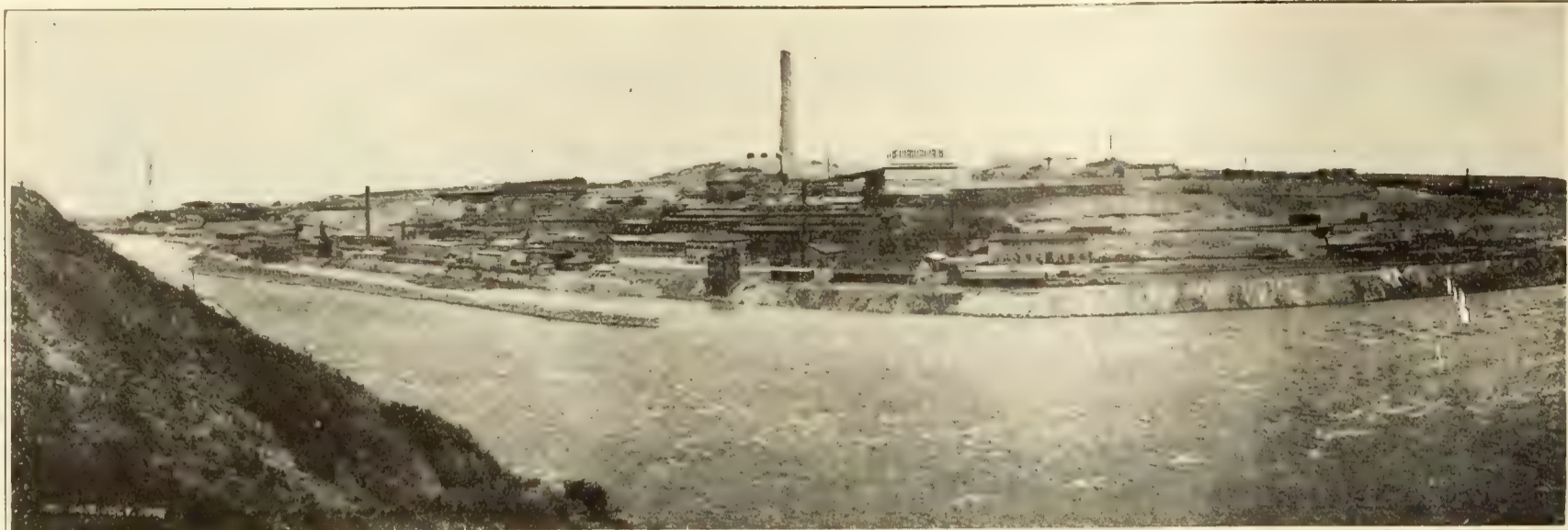
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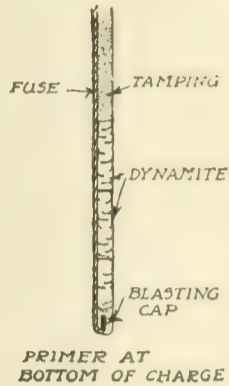
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Dynamite Efficiency Depends upon Proper Priming

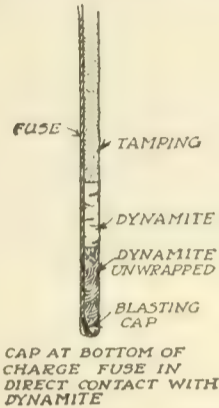
Load Dynamite the Wrong Way and You Lose Money



Here is one **WRONG** way:

For instance, the cap with fuse should not be placed at the bottom of the hole like this as the side spit of the fuse would be likely to set fire to the dynamite.

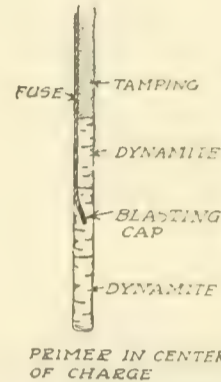
PRIMER AT BOTTOM OF CHARGE



—here is another

This is also bad practice as the cap is pointed away from the charge instead of toward it and the fuse is also likely to set fire to the dynamite before the cap explodes.

CAP AT BOTTOM OF CHARGE FUSE IN DIRECT CONTACT WITH DYNAMITE



—and another

Even the middle of the charge is not the right place to put the primer as the top cartridge does not receive the full force of the cap and the fuse may ignite the powder that touches it.

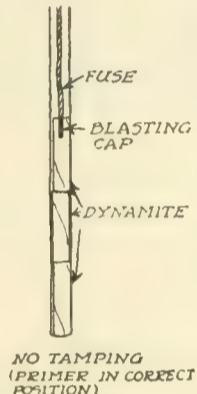
PRIMER IN CENTER OF CHARGE



—still another

Lacing the fuse through the priming cartridge is bad practice. It nearly always lets the fuse side spit into the dynamite.

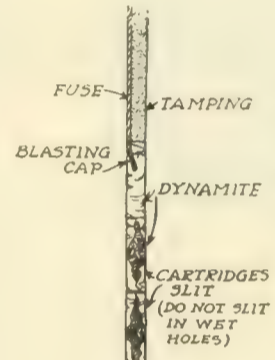
FUSE LACED THROUGH CARTRIDGE



Another **WRONG** way:

This kind of loading, without tamping, is expensive and inefficient as the top cartridge wastes most of its force blowing out the hole. The Bureau of Mines reports that tamping increases the effectiveness of high explosives enormously

NO TAMPING (PRIMER IN CORRECT POSITION)

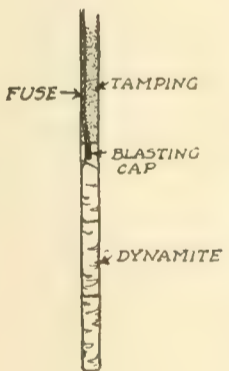


—and another

If the holes are full of water the cartridges of dynamite should not be slit as water affects nearly every kind of dynamite except gelatin.

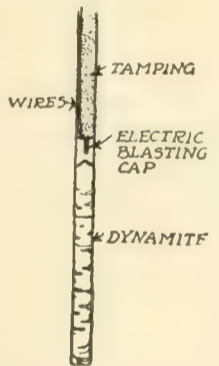
Load Dynamite the Right Way and You Save Money

The **RIGHT** way:



This way, with the cap in the top of the top cartridge, pointing down toward the bulk of the charge, with lots of tamping and no part of the fuse touching the powder will give you a perfect shot every time.

Another **RIGHT** way:



Or even if you fire electrically, you will get best results this way as the electric blasting cap is placed so as to exert its maximum detonating effect on all the explosive in the charge.

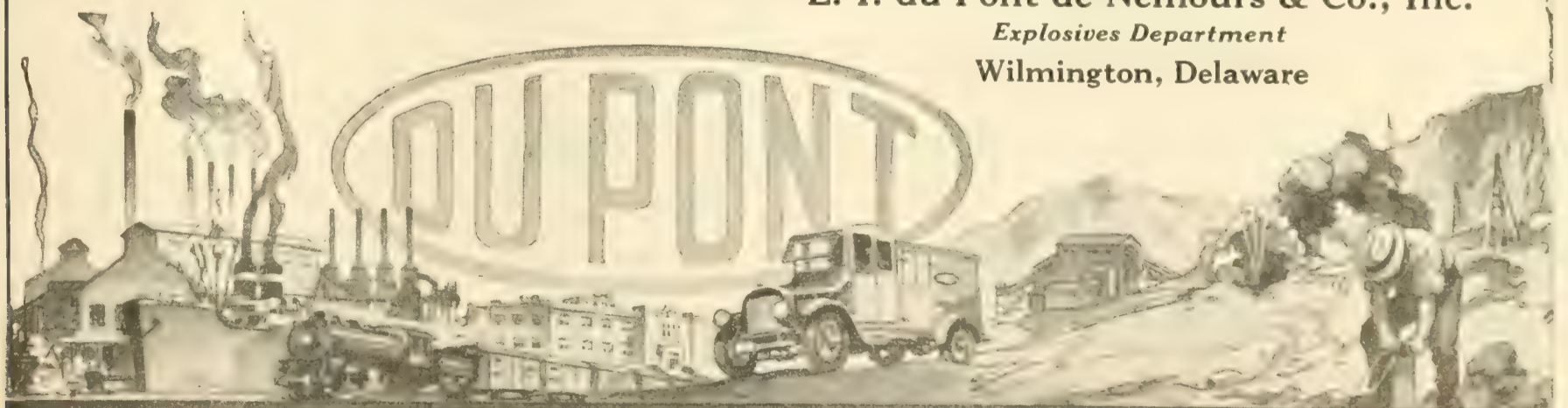
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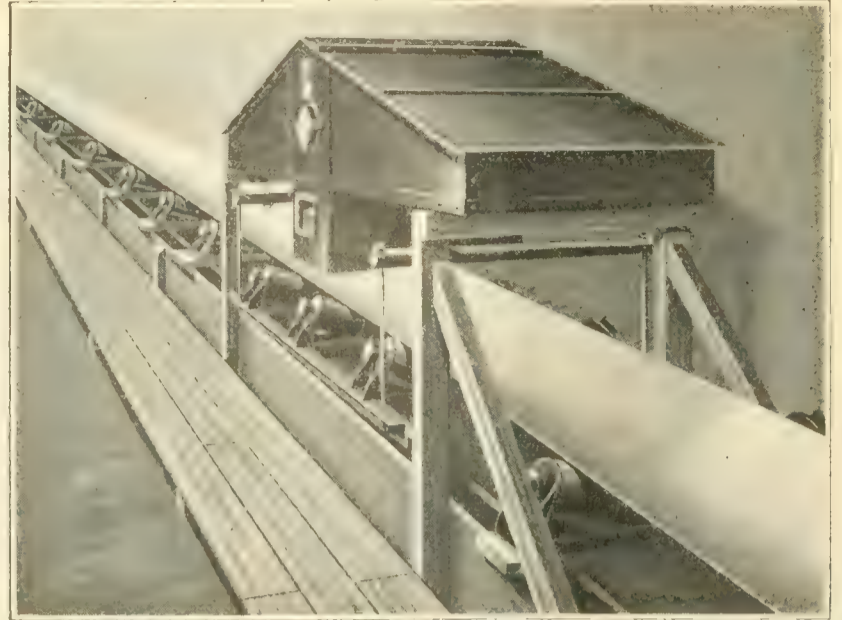


EXPLOSIVES ~ SERVICE

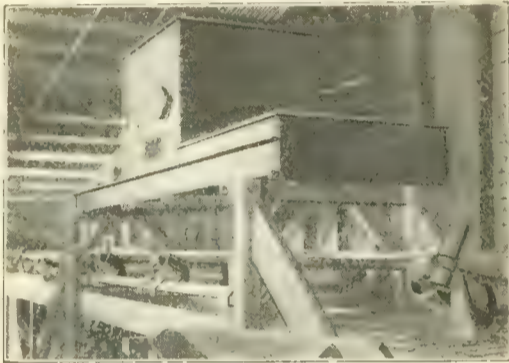
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Weighs Material While in Motion

Any material handled on a conveyor fitted with MERRICK WEIGHTOMETER is automatically weighed as it moves along. The scale is always on the job—it makes no slip-ups—it's honest—and its totals at the end of the day are accurate. MERRICK WEIGHTOMETERS require no special attendant. Any user of a conveyor whether belt or pan—large or small—can improve its efficiency by their use.



TYPICAL INSTALLATION "G" TYPE
MERRICK WEIGHTOMETER



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The Ancient Quarries of Ptolemais

Like a gigantic staircase, the mountain of Gebel-Toukh slopes back from the waters of the Nile. Here, in the 4th century, B.C., Egyptians quarried stone for the streets and buildings of Ptolemais. One can still distinguish the grooves made by the tools of the workmen, and the instructions inscribed on the rock by the foremen.

When it became too costly to remove the overburden, subterranean quarries were started. The workman, on his raised platform, wielding a pointed tool, had no easy task in making the first cut for the roof in his system of "right-stepping".

Production at these quarries was insignificant compared with the enormous daily tonnages made possible by modern machinery and explosives. But conditions today which demand such large production also necessitate the prevention of waste in time,

labor and materials. Now, even dynamite, one of man's greatest labor savers, must be scientifically selected.

On work for which it is suited, Hercules Special No. 1 reduces blasting costs. It contains about 35 percent more cartridges per box than 40 percent dynamite which it frequently replaces, cartridge for cartridge. For several years we have pointed out the economy of Hercules Special No. 1. It contains nothing but the highest grade of standard materials and by wide use at many quarries and mines has proved its dependability.

Our new book, "Eliminating Waste in Blasting", was written to assist you in reducing blasting costs. Write to our Advertising Department, 934 King St., Wilmington, Del., for a free copy.

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Their advertisements are appearing regularly in the JOURNAL. The equipment they produce warrants your investigation if you are in the market for their products. Give them an opportunity to bid upon your requirements.

THE AMERICAN MINING CONGRESS

DUPLICATE

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I have this day Any day, inspected the Your Mine mine
Any County, and found that the total quantity of air at the inlet was
Abundant cubic ft. per minut ms was measured in each entry beyond the last
 room turned, and in the c ms in each entry. The quantity of
 air measured in each c

| Split No. | Cubic Feet Air | | Cubic Feet Air | Number Persons |
|-----------|----------------|--|----------------|----------------|
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A Clean Inspection Report Always for

BUCKEYE FANS

Buckeye Fans put the mine on a safety basis and increase the output per man owing to an abundant supply of fresh air. After firing, Buckeye enables the men to go back to their work quickly as it clears out the smoke with a very little waste of time. Put a Buckeye on the job and keep your mine free from danger of gases, and at the same time have the best possible working conditions for your men.

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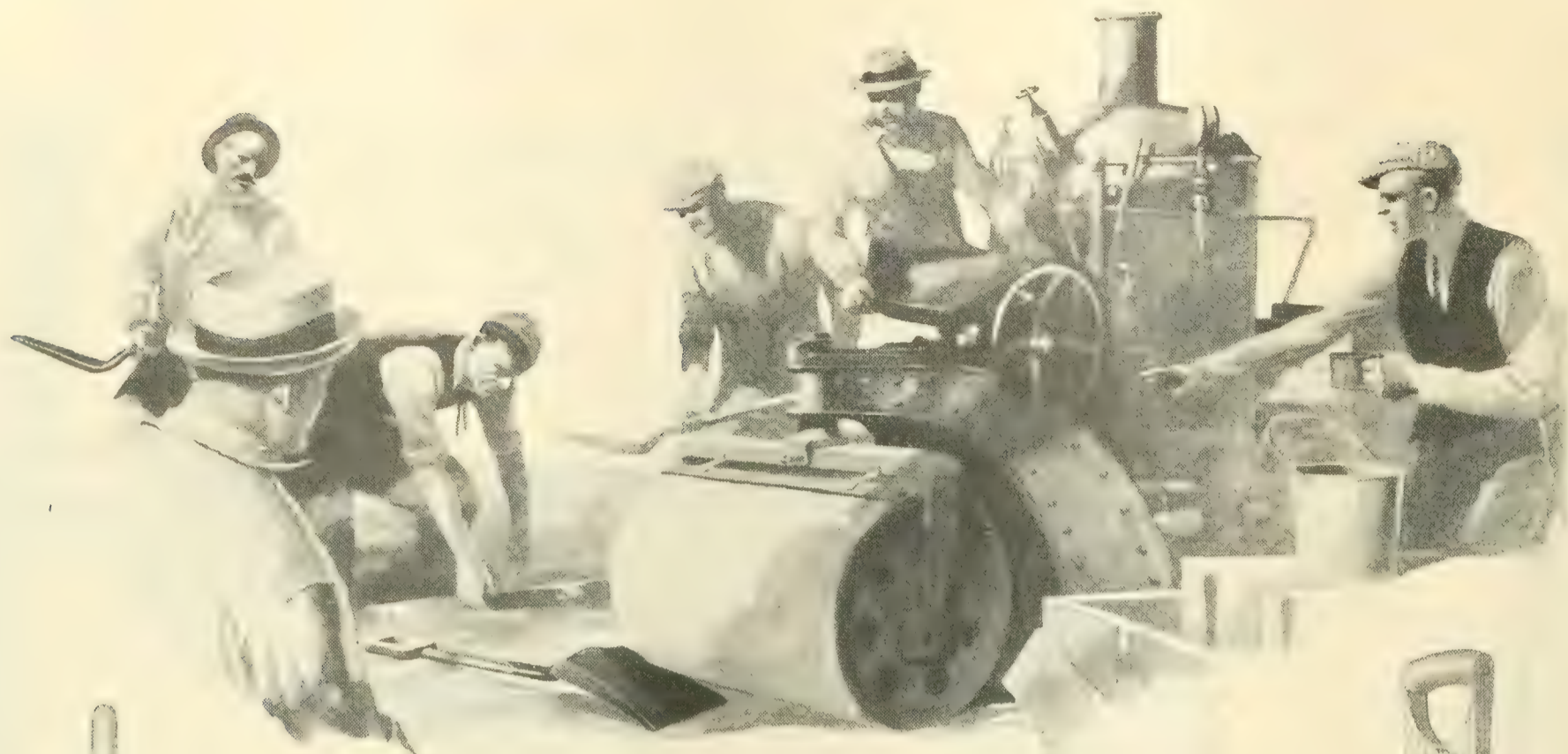
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“A ten-ton steam roller didn't even dent the shovel”

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This shovel was not suited to his needs. He was building asphalt roads, and wanted a shovel with a flatter blade that would scatter the asphalt.

So he tried to flatten the blade of the shovel that was sent him. First, he used a hammer, but could make no impression on it. Then he placed that shovel upside-down on a concrete roadway, and had a ten-ton steam roller pass over it four times *with no apparent effect.*

He then requested that “a special flat shovel be made up to meet his requirements, as it was impossible to change or damage a finished Mo-lyb-den-um Shovel.”

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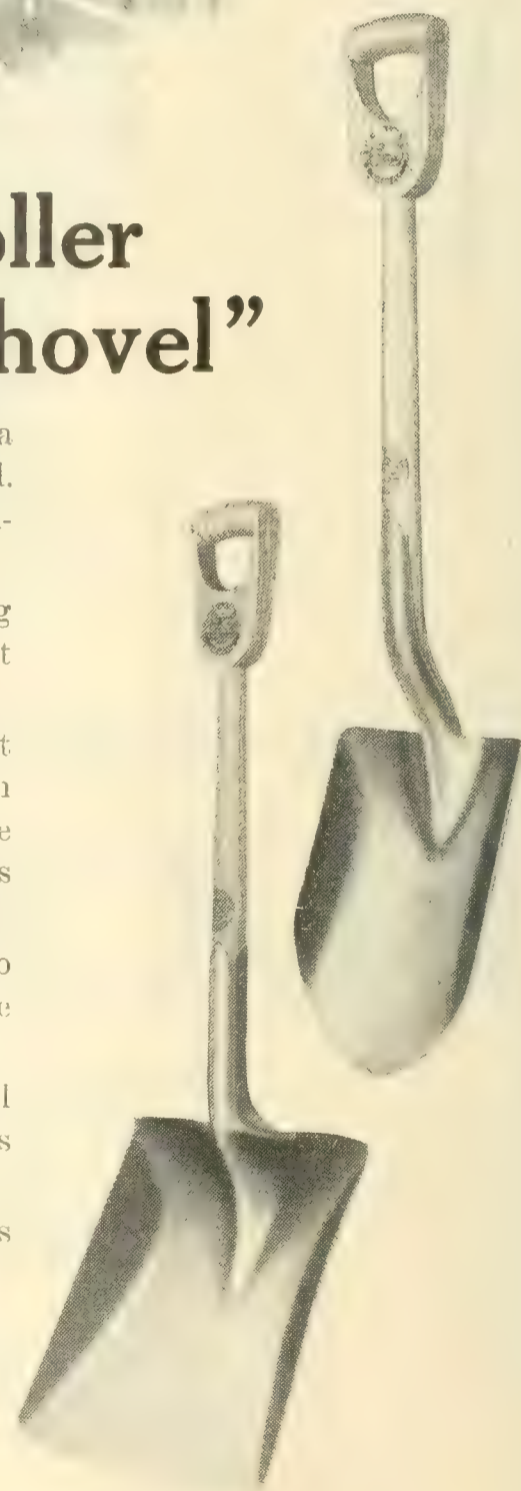
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INDUSTRIAL STATESMANSHIP

THE KANSAS Industrial Court has much to its credit. In spite of the very bitter opposition of organized labor against its provisions, it has so functioned as to bring great credit to those who have assisted in its development and enforcement and has been a citadel of defense against the orgy of waste and destruction which have been a part of industrial disturbances in other states.

Its constitutionality is founded upon the declaration that

"The transportation and production of fuel, food and clothing is hereby determined and declared to be affected with the public interest and therefore subject to supervision by the state as herein provided, for the purpose of preserving the public peace, protecting the public health, preventing industrial strife, disorder and waste, and securing regular and orderly conduct of the businesses directly affecting the living conditions of the people of this state and in the promotion of the general welfare."

It may well be questioned as to whether this law would work equally well in other states, in which manufacturing and mining industries predominate over the agricultural industry. However, its principles and its effect in actual operation may well be studied as the most advanced step yet taken looking to the solution of the greatest problem of the nation, that strikes as a solution of the wage question must be terminated.

Whether the production of food, fuel and clothing are so impressed with a public use as to make their control by the state proper is a very important question. It is true that the Kansas law expressly stipulates that these lines of business are declared to be impressed with a public use only for certain specified purposes.

If limited to the purposes outlined there might be no danger in a general enactment of these provisions, but the declaration that any line of business, which is not a necessary monopoly, shall be impressed with a public use carries with it great danger to the fundamental principles of our government.

It much be acknowledged that the most insignificant commodity may in great emergencies become a public necessity. It would scarcely be thought advisable to declare the production of tungsten a public utility simply because in the early days of the war the great scarcity of this metal in the face of the extraordinary war demands for its use, increased the market price of the article more than 1,000 percent.

At that time governmental authorities were keen to have the government function as a price-fixing agency in order to limit the profits of production. The fact is that every scarcity of any commodity leads to an increased price. If every scarcity and high price shall lead to legislation declaring the production of the particular commodity to be charged with a public use, the

road is very short to the time when the government shall control all business and the reign of socialism become complete.

The MINING CONGRESS JOURNAL hesitates to approve, no matter how important the purpose seems, any plan which in the end means socialistic control of industry; and yet we recognize that property rights fade away in the face of public emergency. It is the duty of statesmen to avoid the emergency.

As an illustration, and one of great force, we recall a story of the early days of Fairbanks, Alaska.

A prominent member of the American Mining Congress had planned the development of a large mining property and had laid in a supply of provisions sufficient for a year's operation for a large force of workmen. The early closing of the river Yukon to navigation had cut off the only possible means by which provisions could be made available to the 15,000 population of the little city of Fairbanks, which had in stock a supply of little less than six weeks, with a seven months' closed season in prospect.

The gentleman of the mining development was a statesman and a philosopher. He immediately saw that in the face of 15,000 starving people his ownership in the year's supply of provisions for his mining operation must yield to the public necessity.

Being a statesman, he did not rely upon his rights under the Constitution and plan for the protection of his property by force, but immediately improvised a remedy for the distressing situation. The larger part of the population of the city of Fairbanks was quickly organized into pack trains and the six weeks' supply of provisions was utilized in getting those who must otherwise face starvation over the mountains to the coast where provisions were available.

It is the business of a statesmen to devise means by which the necessity for declaring coal to be impressed with the public use shall be avoided.

THIS WOULD FIX IT

THE PROBLEMS of government are relatively simple. All that it is necessary for Congress and the administration to do in order to suit the public clamor is:

- Pass the soldier bonus;
- Cancel the foreign debt;
- Establish free trade;
- Substantially reduce taxation.

That this would increase our annual national expenditure several billions of dollars and decrease the governmental income a like amount is, of course, a secondary consideration.

FRUITS OF DEMORALIZATION

THAT THE coal miners got the best of their summer argument with the operators is known. That the operators, because of their defeat, have developed that demoralization which customarily is found among defeated forces, is too obvious to be concealed. Indeed, only harm could come from any efforts at concealment. We may as well admit the known facts and then put the forces of the industry at work to do what needs to be done.

It may be taken for granted that this demoralization among the operators will be turned to somebody's account. The men of the industry will decide who is to be the beneficiary of this situation. They will decide it by their own attitude toward their own peculiar problem. It is self-evident that, since there are but two active parties to the coal wage controversy, the direct benefit must accrue to either the miners or the operators—in the first instance. Obviously and unavoidably, the miners win the right to dictate their own wage schedules, the public loses directly the exact measure of the resulting increased price of coal. But if the operators retain the right to bargain, and succeed in reducing the labor cost of production—assuming, of course, that competition among them is still unrestrained—the direct benefits measured in dollars and cents goes to the consumer.

Congress has it in its power to take advantage of the present demoralization among the operators and to force them into a settlement of the wage question which will be against the interests of the industry and the public and commensurately in favor of the miners. But our public men are not thoughtless, vicious or venal. They are not going to take advantage of the coal industry while it is admittedly powerless to protect itself. Nor are they going to turn the union, which has shown an amazing selfishness, loose upon a defenseless people. Congress may make mistakes because it is badly informed. But Congress is not a wanton peddling other people's property and rights in exchange for any advantage to itself.

But the coal industry cannot rely upon others to fight its battles. Its leaders have the sympathy of other business men, the public, and many public officials. To realize the full benefit of this friendly disposition, the industry must put itself in position to take care of its own affairs. Of far greater importance, it must develop a mood to discuss with absolute freedom its efforts at self government with these public men and the people.

Coal operators realize—but the people do not—that the coal industry is confronted by problems which cannot be solved in a day, a month, or indeed in many years. It will take far longer than a year to find the truths—not merely the facts—upon which a truly constructive program for the industry must rest. And, after the truths are known and the program blocked out in the rough, it will take years of patient effort to get those concrete results toward which this country seems to be struggling.

Seeing how much is ahead of it, one of the first things which the industry should do is to re-form its associations and strengthen them by stating clearly the lines of work which they are expected to do. The principal work, for the next few years, should be, it would seem, to put the industry truly in position to know itself.

It would then be in position to set out deliberately to use that newly-acquired knowledge as the foundation of a program which would give reasonable promise of re-

moving the mischief about which so much complaint is made.

Having thus made a start in a direction which would encourage the people to believe that it was sincere, the industry could, with good grace, lay its new purpose squarely before our public men and ask them to withhold any effort at federal control until the industry could work out its own salvation. Having won their consent to a sort of political moratorium—which would not be difficult—the coal industry should go to work on its own problems and keep the public men and the public consistently informed of their various movements toward effective self-government.

THE WIDE OPEN OPPORTUNITY

THE FEDERAL COAL COMMISSION has organized and has started to work. It is a creature of the law. Technically it will have to follow the mandates of its creator. What Congress apparently intended was that this Commission should gather up the fragments of information dumped on Congress and the Commissions in a series of bitter controversies; bring that information up to date; compile it all in a voluminous document; condense the volume into a brief report which everyone can understand; and, in the process of condensation, extract the truth.

The work which the Commission is thus expected to do should have been done a long time ago. It could not easily be done because a non-partisan organization, in which all concerned could impose confidence, was not available. This Commission appears as the special friend of none, but as the impartial judge to consider the rights of all. It has a wide open opportunity to do a great work. Because of the thing it is trying to do, we favor it. Because of the men who have been appointed as commissioners, we have confidence in it. But, we realize that its future is in its own hands, only. It must make its own place in our history. And, its place will be exactly what it makes for itself.

Its first and most difficult job will be to establish itself in the confidence of the partisans. This is peculiarly difficult because it has no background of precedent of performance such as would be the case were this a new court. In this country, it is wholly an innovation. It is thrust into the center of a situation where the miners and operators have just concluded a violent quarrel, and are undecided as to whether they ought to renew it; where the union and non-union districts have brought to a climax their competitive struggles of twenty-five years' standing; where, for seven years or more, producers and consumers have been on the opposite side of a bitter debate over prices; and, where the industry has been unable, always, to negotiate in full harmony with the political forces. The Commission will have to teach the various partisans that it will deal fairly with each, but in a way to do justice to all. It must establish in the minds of all full confidence in itself before it can get that information which alone will make its findings valuable. Its position is most difficult because bitter partisans are not easily won over to a board appointed by one of the contestants.

After the Federal Coal Commission has won the confidence of the industry, the political groups, and the public, it will have to make a decision which is most difficult. It will have to decide between two courses of action. That is, it will have to decide whether it is going to seek the facts, or the truths of the coal industry; whether it is going to follow the technical letter, or the spirit of the law which created it. This is an awkward

position for anyone to have to occupy. Even so, the decision must be made. It must be explained to the public. And yet there is in the public mind no clear distinction between the two words. This makes the position of the Commission most trying.

The distinction between these two words can be drawn roughly this way. The outstanding mathematical "fact" is that 2 plus 2 equals 4. The outstanding "fact" of the coal industry is that if it costs the miner \$2.00 to house and clothe his family, plus \$2.00 to keep them well, to educate them, and to entertain them, his total cost of living is \$4.00. This means he must have \$4.00 to pay his expenses. If the coal operator has a cost of \$4.00 for his coal he must get \$4.00 for it, or go out of business so soon as his money is gone. This would mean that coal production would stop.

A strict adherence to "fact" finding only, in connection with the convolutions of the coal industry, must result in findings which head toward the exact fixing of wage scales; the exact determination of all elements of cost; and the exact fixing of prices resting upon a predetermined margin of profit upon a measured and prescribed capitalization of all mines. Thus, by adhering to a rigid fact-finding program, and to the application of those remedies suggested by the facts as found, we can easily be forced, by logic, into rigid governmental control of the coal industry.

The "truth" may be that the miner was extravagant, or careless, in spending his money. The "truth" may easily be that the operator's cost of production rose because he was inefficient. The "truth" may be that neither side was willing to amend its own program, but that each insisted that the other do all of the sacrificing. The "truth" may be that both decided to stand stubbornly on their "rights," and thus—although unwittingly—decided to make the public pay. Thus the "truth" may easily be that the fact-found scheme devised by the Commission to make comfortable the situation in coal would result in great discomfort to the buyers of coal, while leaving the "mischief" a permanent resident in the industry. Obviously, too great an adherence to fact finding, and too complete a disregard of the elements of truth might result definitely to the disadvantage of all concerned. The Federal Coal Commission must make a nice distinction as to the relative degree of stress to be put upon these factors. We hope that it may succeed.

THE REHABILITATION OF EUROPE

MORE THAN ten thousand bankers attended the recent annual convention in New York City of the American Bankers' Association.

The convention was apparently staged to put over the New York idea. New York wants the United States to cancel the obligations of foreign nations and urges that such cancellation is necessary to the rehabilitation of European finances, without which Europe will be unable to do business with the United States.

The MINING CONGRESS JOURNAL has no criticism of so-called "Wall Street." It believes in big business; it believes that large aggregations of capital are essential to the business prosperity of the country; but it insists that the Government of the United States shall not and ought not to cancel the indebtedness of foreign nations. If the bankers of New York City, or of the country, desire to donate the Liberty Bonds which they hold to any of the European countries the MINING CONGRESS JOURNAL has no objection, but it strenuously objects to the placing of this additional burden on the taxpayers of the United States.

The Liberty Bonds represent our share of the World War plus our loans to Europe. They represent the loans of individual citizens to the government. To cancel these obligations would be foolish in the extreme for this country, unfair to the nation's taxpayers and benefit only certain New York bankers who are in position to make a profit out of all international transactions, whether going or coming. Let Wall Street forgive, or, if it can induce the bankers of the country to join them, let the bankers forgive, but to put this additional burden of taxation on the productive enterprises of the United States would be to stifle business and cripple the productive machinery of the nation.

What Europe needs is money invested in its business enterprises. It matters not who owns the money so far as her rehabilitation is concerned. Let us invest our surplus capital in reproductive enterprises abroad to the extent that we are able to assist in the industrial rehabilitation of Europe; but it little behooves this country to cripple her own industries for the sake of helping others. We must not change places with Europe, even though certain bankers of New York might profit thereby.

THE TAX EXEMPTS

TAX-EXEMPT BONDS are increasing in volume. Every new issue finds a ready market. They draw from the reservoir of liquid capital vast sums which otherwise would be available for industrial investment. They cause an additional tax burden to be imposed to meet interest and sinking fund requirements. They reduce the tax base of the country by increasing the volume of non-taxable wealth. They foster extravagance in the expenditure of public funds. They encourage public indebtedness beyond a sound credit basis, weakening the credit of the nation. They stimulate inflation and discourage retrenchment. They create temporary employment for labor and make insecure permanency of employment in industrial enterprises where the shortage of labor is dangerously acute. They exempt from taxation a class of wealthy citizens who wield great political influence without sharing directly the duties or responsibilities of government. They constitute an obstacle to industrial prosperity and a menace to national welfare.

Unless prompt measures are taken to prevent the continued issuance of such securities, to curb extravagance in public expenditures, to limit public indebtedness for unnecessary or unreasonably costly public improvements, to stem the flow of capital into non-productive enterprises, and to otherwise control agencies of government which at present ignore economic laws in pursuance of their administrative or legislative functions, the nation will be confronted ere long with a serious political and economic upheaval from this cause alone. Only a Constitutional amendment can remedy this situation and prompt action is imperative.

It augurs well for the taxpayers of the country that the Federal Administration recognizes the importance of the issue. The removal of the exemption whereby income from these securities will be made subject to tax will not deprive state and local governments of a market for a reasonable issue of bonds whenever public improvements are needed, but will serve to promote efficient management of the business of such governments and will compel sound practices in the handling of public funds raised in this manner.

THE BREADTH OF PROTECTION

WHILE AN INTERVIEW is not ordinarily good form in which to express editorial opinion, yet a conversation between a metal man in New York and an official of the Mining Congress furnishes so obvious an expression of editorial truth that it deserves to be so stated.

The metal man is an importer of metals and minerals produced in foreign countries. He was expressing himself in bitter opposition to the tariff "not, you understand, from the standpoint of any selfish interest, merely on the broad constructive policy which affects the country as a whole." It is interesting, by the way, to note, how broad a person's viewpoint can be under such conditions.

"How is business generally?" he was asked.

"Oh, you would be surprised at the change in the last six months. Not only up through New England, but through all manufacturing centers the demands for metal are coming in fast."

"Why is this?" he was asked.

"Oh, I don't know. I imagine business just is better."

"Don't you realize," he was asked, "that the reason business is better is because these producing centers are starting up again and that the reason they are starting up is because for the first time in four years these producers and manufacturers have some assurance of protection against importations of competing products at ruinously low foreign cost of production?"

We do not sufficiently realize in this country the extent to which our individual prosperity is tied up in national prosperity. The average business man engaged in mass production centers his entire attention on his costs of raw material and production and looks to the business which comes to him as an inalienable right. We should never forget, as mining operators, that we can only sell our metals, our minerals and our coal to factories which are operating and to railroads which are hauling American merchandise to and from these factories in the process of manufacture.

When you read, as you so often will, rather contemptuous lofty attacks on the principles of American protection, remember these basic facts.

INDUSTRIAL COOPERATION

A FRIENDLY SYMPATHETIC relation between employers and employes is an asset and not a gratuity. It is an asset to both parties—to the employe it brings the largest yearly income and the most regular employment. To the employer it brings a surer if not a larger profit—it brings a feeling of safety as to investment, and to both sides a feeling of satisfaction.

The first resolution passed by the Cleveland Convention of the American Mining Congress is designed to develop these conditions wherever and whenever the human factors involved can be brought to act together to the common end.

A hasty conclusion might easily be reached that the first resolution of the Cleveland Convention favoring a wide-spread movement looking toward industrial cooperation and its last resolution declaring for the judicial determination of industrial disputes are inconsistent with each other.

No conclusion could be further from the truth. The more complete the cooperation between employers and employes the more persistent are the efforts of the

radicals to discredit and destroy the happy condition which prevails.

The radicals of organized labor have prevented the fruition of many efforts in this direction and frequently have turned the good intentions of the employer who has faithfully and earnestly tried to establish better relations into an attitude of animosity because his best efforts have been nullified and his best intentions misrepresented.

To urge repeated efforts upon both sides—to set high the example of successful industrial cooperation, to continuously point out the advantage of harmonious relations both from the standpoints of humanism and profit will be the aim of the Committee on Industrial Cooperation.

If, however, all of these efforts have proved futile—if the urge of hate and ignorant selfishness have brought the contending factions to a stage of civil war, then it is that the provisions of the final resolution of the Cleveland Convention shall be brought into action to secure the constitutional rights of the individual to life, liberty and the pursuit of happiness.

It might as well be said that because jails and prisons are necessary in the final treatment of criminals that the building and support of schools and churches should be abandoned.

The school and the church, like the movement for industrial cooperation, are the means by which humanity is brought by education and religious influence to serve the higher impulse of humanity. When these have entirely failed, the prison is a part of necessary discipline and public protection. When Industrial Cooperation fails, disputes affecting the public peace, welfare and morals should be made subject to judicial determination.

There is no conflict between these resolutions—the one is the complement of the other in the great realm of justice, sympathy and industrial prosperity.

WHO ARE THE REAL CITIZENS

THE ATTEMPTS of labor leaders, radicals, and professional politicians to discredit employers, property owners, investors, and taxpayers by classifying them as "Wall Street" interests, regardless of their residence, and by including employes, transients, and non-taxpayers in the term "Home Folks," irrespective of their standing, responsibilities, or contributions to the welfare, progress, and government of the community in which they live, are not as effective in influencing an enlightened public as the propagandists have intended they should be.

The public recognizes the fact that the business of mining, for example, necessitates the presence of mine executives at the important commercial and financial centers. The public also knows that the great mining and industrial enterprises of the country have stockholders located in every community and village in the United States, far remote from Wall Street. The public also knows that the executives, owners, and stockholders of these enterprises are representative citizens who do not shirk their just obligations to community or government. The public knows these things because these same owners, operators, and investors constitute a large integral part of the public.

Let us regard these classes in their relation to the whole scheme of national industrial development and progress, and not as independent groups with conflicting interests which must be dealt with separately.

THE LURE OF GOLD

THE RETURN to gold mining in spite of the high price level can only be explained by the gambling spirit which finds most attractive surroundings in the gold mining industry. The recent discoveries of very rich gold ore in the Portland mine at Cripple Creek, Colorado, reported to carry values as high as \$50 per pound in a district regarded by many as being worked out, will add impetus to the search for gold and lead to many enterprises which are not justified by the present mining cost. Production cost as applied to low-grade ores running from \$2 to \$5 per ton in value have no place in the calculations where \$50 per pound ore is concerned.

In days gone by, the Cripple Creek district has produced many carloads of ore, carrying values in excess of \$10,000 per ton. The hope that such ore bodies may again be discovered is sure to lead to much development which would not be justified by the more certain discovery of low-grade ores. If gambling is to be tolerated no better form of gambling can be found than that which leads to the production of the permanent life blood of trade and commerce—gold.

CONTRACTS OF EMPLOYMENT

IT IS DIFFICULT for the MINING CONGRESS JOURNAL to distinguish contracts of employment from other contracts. A contract is an agreement between competent parties for a legal consideration to do or not to do a particular thing. If this contract is for a specified term, the employer has no right to discharge, nor the employe to quit, until the term has expired and a violation by either side to the contract will render him liable to damages. If the contract is for a shorter period, the workman may quit at the end of such short period or the employer may discharge at the end of that period, and the contractual relations cease at the time of the quitting or the discharge.

Under the theory of employment contracts which labor unionism is trying to establish, a contract of employment becomes a continuing contract on the part of the employer with no binding obligation upon the employe. An employment contract which either side may terminate at pleasure is a contract which once terminated entirely concludes the relations between the parties. A return to work with the approval of the employer is in fact the making of a new contract.

GOVERNMENT BY INJUNCTION

MR. GOMPERS does not like what he calls government by injunction. He does not like any plan which interferes with his desire that organized labor under his direction shall be greater than the government. The phrase "Government by injunction" is but a shrewdly devised device to mislead the public mind. There is no such thing as government by injunction. Even the sweeping injunction recently issued by the United States Federal Court at Chicago, only requires that men shall not do certain things; which they have no right to do, that they shall not attempt to interfere with the transportation service of the country; they shall not prevent milk being shipped to the babies of Chicago; they shall not prevent the shipment of coal to New York, or to other great centers where people suffer from cold.

Mr. Gompers seems to believe that a member of a labor

organization is at perfect liberty to interfere with others who desire to run the transportation systems of the country, and he objects very strenuously to any interference with this alleged right.

Government by injunction is simply an effort to prevent members of organized labor or their sympathizers from doing illegal acts. Any act which threatens the health or safety of existence of other human beings is an illegal act, and this only does the injunction seek to prevent.

A NEW AERIAL TRANSPORTATION THEORY

THE SCIENTIFIC AMERICAN announces a theory developed by aviation experts that a continuous eastward moving air current exists at an elevation of about seven or eight miles above the earth's surface, moving at a rate of 300 miles per hour. It is pointed out that an air ship reaching this air current at San Francisco, moving on its own power at a rate of 100 miles per hour and aided by the 300 mile per hour movement of this supposed trade wind current would find itself above New York in approximately eight hours. MINING CONGRESS JOURNAL has been so frequently surprised by the scientific accomplishment of the seemingly impossible that it is not disposed to question this almost incredible theory of the *Scientific American*. But this accomplishment would be but an aggravation unless the passenger could return with comparable celerity. The curious mind naturally inquires how this is to be done. Even though this current might be followed entirely around the world it would take at least twenty-four hours to again reach San Francisco. Is it not possible that an elevation may be reached above the moving air covering of the earth where an airship may remain stationary, uninfluenced by the earth movement, to which point the west to east movement of the earth would bring San Francisco under the fixed point in approximately three hours so that the aviator might via the seven mile elevation current reach New York from San Francisco in eight hours and by rising above the influence of the earth's movement in three hours could again descend at San Francisco. Fine. Let the scientific aviator proceed.

SERVING THE MAJORITY

IT IS A MATTER of great regret that the activities of the American Mining Congress with reference to a protective tariff on minerals has caused the withdrawal of a few of its old time friends whose sympathy and support have been so greatly appreciated in the past. The American Mining Congress has tried to represent the best thought of those who make up the great majority directly interested in the mining industry. It has always stood for the producer as against the manufacturer of mineral products. Its mission has been to bring about the largest production of mineral consistent with market demands and it has always hoped that none should become disgruntled when on one subject they find themselves in the minority and not in sympathy with the wishes of the majority.

However, we shall hope that those who now feel dissatisfied with our efforts will, as time goes on and changes in industrial situations come about, appreciate the fact that we have responded to the best thought of the majority, and whether they agree or not, will certainly respect the organization which, having adopted a certain course, carries out its plans effectually.



Sidney F. Jennings
President, American Mining Congress

TANGIBLE RESULTS ATTAINED AT CONVENTION

Annual Meeting of Mining Congress Sees Launching of Movement for Industrial Harmony—Tax and Standardization Conferences Cover Strenuous Programs—Valuable Interchanges of Opinion

STORIES OF CONVENTIONS and expositions possess an attraction for superlatives. The tendency in description of these events generally is to fall into the "greatest show on earth" style. Although not especially commendable, this might be pardoned in its use in connection with an "after the ball is over" story of the Twenty-fifth Annual Convention and National Exposition of Mines and Mine Equipment of the American Mining Congress at Cleveland, October 9-14. But it is sufficient to pin the story of this gathering of mining men from all corners of the country upon this one cold fact—the foundation was laid for a stretch of progress which the mining industry may achieve during the coming year.

OPPORTUNITY FOR COMPARISON

There was no necessity for creation of issues that might furnish material for discussions—the mining industry at this time is faced by obvious problems of magnitude that demand attention.

The most brilliant minds of the industry might conceive glittering solutions to these problems out in the distant stretches, but without an opportunity for comparison and discussion of these thoughts, the industry would be shackled so far as working its way through obstacles and economic hazes is concerned.

The convention grappled with several major issues, any one of which might well have formed the sole object of discussion. Only the organization of the American Mining Congress, by which these discussions are before various divisions throughout the entire year, makes it possible to bring these matters successfully before an annual convention in the aggregate.

That each issue had been carefully considered by those parts of the organization most directly concerned during the months preceding the convention is shown by the smoothness and directness of action characterizing discussions on the floor at

Cleveland. So well had each subject been analyzed and so clearly were these analyses presented to the delegates, that it was possible to apply all efforts to actual determination of policy, with a mass of preliminary work thus being eliminated.

Most notable, perhaps, of the convention's accomplishments was the step it took toward introduction into industrial relations of what may best be termed a "practical idealism." Progress along a channel such as this, finding its path unguided by precedent, must of necessity be comparatively slow and stretched over such a space of time as to breed impatience within the more eager of those who seek elimination of friction in industrial operations. Even the smallest progress is noteworthy.

That an organization holding the scope possessed by the American Mining Congress, representing the employers of more than a million men, should display the courage to devote itself to exploration of so new a field is notable; that such an organization should within a period of short months establish itself firmly in this direction is remarkable. Men who long have made a study of this situation addressed the convention, diligent thought was applied to the subject by delegates, and now the industrial world that within its realm a new development is being exercised.

Of longer standing, and therefore char-

acterized by greater tangibility, is the standardization movement which commanded a major portion of the convention's activity. Progress in the campaign for a reduction of production costs is evident. Reports of committees showed the benefit of additional study during the past year and a continued approach to the point where every possible efficiency will be harnessed.

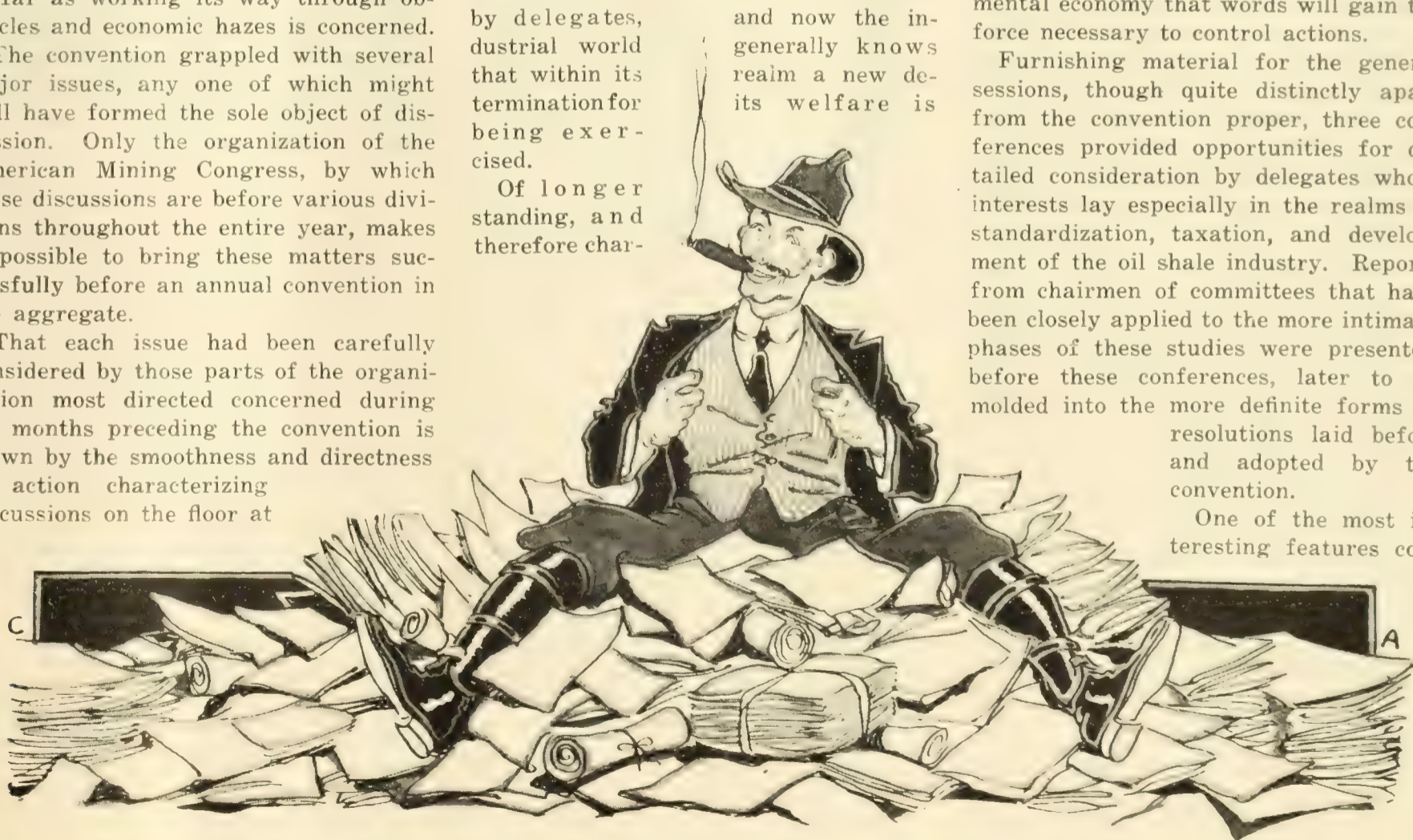
A WASTE OF BREATH

Mere declarations that this or that action on the part of the national government is in error might just as well be breathed into a vacuum. Earnest consideration must be applied to criticism if it is to be of value as a remedial factor. Proceeding along this theory, the convention struck deeply into the question of the burden of national taxation, drawing upon a store of information developed during the year by the organization's tax division for guidance in arriving at its declaration of policy.

To say that governmental expenditures must be held to a minimum if the amount of taxes levied by the federal government is to be halted in its ascent toward the sky is to pour out a platitude. But platitudes are not to be despised, and it is only by a constant laying of emphasis upon the necessity for governmental economy that words will gain the force necessary to control actions.

Furnishing material for the general sessions, though quite distinctly apart from the convention proper, three conferences provided opportunities for detailed consideration by delegates whose interests lay especially in the realms of standardization, taxation, and development of the oil shale industry. Reports from chairmen of committees that have been closely applied to the more intimate phases of these studies were presented before these conferences, later to be molded into the more definite forms of resolutions laid before and adopted by the convention.

One of the most interesting features con-



nected with the convention was the interest centered in the oil shale conference. One year having passed since the last conference was held, bringing the country that much closer to the point when its petroleum reserves will be exhausted, an intensity of effort on the part of those interested in this infant industry was evident. The latest developments in scientific research in the extraction and more advanced processes of preparing shale oils for the market were placed before the conference. The economic factors upon which growth of the industry plainly are dependent also held a prominent place upon the program of the conference.

The convention also devoted a measure of its time to a justified apprehension of the continued tendency on the part of the government to indulge in paternalism in its relations with industry. In the general atmosphere was found the feeling that a shifting of this course to one bordered by sounder principles will automatically wipe out uncertainties and misunderstandings. Discussion of a subject of this breadth must of necessity be gauged in generalities, and it is no reflection upon the doctrine for presentation that it does not enter into a more concrete presentation. The resolution adopted on this subject stands more in the light of a warning than that of a remedy, holding the position of a marker to be heeded by the nation's legislators whenever discussion within their halls turn to things industrial.

Labor, being an industrial vital, magnetized much of the convention's attention. The discussion was divided between a study of effect of strikes and lockouts in diminishing production and efforts to account for and remedy the existing labor shortage in the metal mining field of the west.

NEW TARIFF DISCUSSED

Discussion of the new tariff in its effect upon the mining industry steered far away from the character of a "post mortem" striking immediately into an effort to foresee and take advantage of every benefit brought to the industry by the measure. President Harding's ruling on administration of the flexible tariff provision was announced at the convention general session devoted to the tariff and the analysis of this provision by William S. Culbertson, vice chairman of the United States Tariff Commission added weight and interest upon the discussion.

Sufficient time elapsed between the end of the open strife in the coal industry and the opening of the convention to permit speakers to obtain an abstract view of the situation tending to give clarity to

the work of those sessions devoted to discussion of the coal industry's problems. Intriguing details found little place; clear perspectives were the order.

Representatives of the metal mining industry came to Cleveland bearing the fruits of meetings held during the summer when the initial and perfecting steps of organization of the western and southern divisions of the American Mining Congress were taken. These preparatory discussions demonstrated their value when the close of the convention showed the prevalence of a new degree of understanding.

The convention and exposition were held in the new Public Auditorium, a

massive structure recently completed by the City of Cleveland, standing as the finest building of its type in the United States. The main arena or ground floor of the great building presented a stretch of space 247 feet long and 127 feet wide without obstruction. It was on this floor and in the machinery hall below, holding the same general proportions, that the exposition of mines and mining equipment was held. The 200 booths in which the individual exhibits were displayed were artistically arranged to blend with the permanent decorations of the hall, the soft shade of gray mingled with blue and high lights of gold forming a perfect setting.

BRISKLY MOVING PROGRAM AT CLEVELAND

Week Packed With Interesting Sessions—Vital Issues Discussed by Authorities—Wide Range of Subjects Covered By Speakers—Flavor of Entertainment Features Provided

THE Twenty-Fifth Annual Convention of the American Mining Congress hummed with activity from the convening of the first session through to the final day.

Although a preliminary meeting of the tax conference was held on the afternoon of October 9, the convention proper did not open until the evening of that day, when the huge Public Auditorium was thrown open to delegates and the general public.

Invited guests, speakers and members of the staff of the Mining Congress occupied seats on the broad-spread stage as the first general session was called to order. In the balconies banked high around the walls of the auditorium was seated a crowd estimated conservatively as numbering five thousand.

On the main arena floor stretching out in front of the stage, long lanes of exhibit booths stood ready for inspection by the throng, with a hundred displays of the heavier machinery located on the machinery floor below.

Richard F. Grant, of the M. A. Hanna Co., Cleveland, presided at the opening session. After outlining the vital part which the mining industry plays in the national order of activity, Mr. Grant introduced Newton D. Baker, president of the Cleveland Chamber of Commerce, former Secretary of War, who delivered an address of welcome to the delegates. He made a strong plea for harmony in relationship between the elements of industry, thus sounding the note which was to be carried through the entire convention.

This theme of industrial relationship formed the high light in the letter from President Harding read at this session.

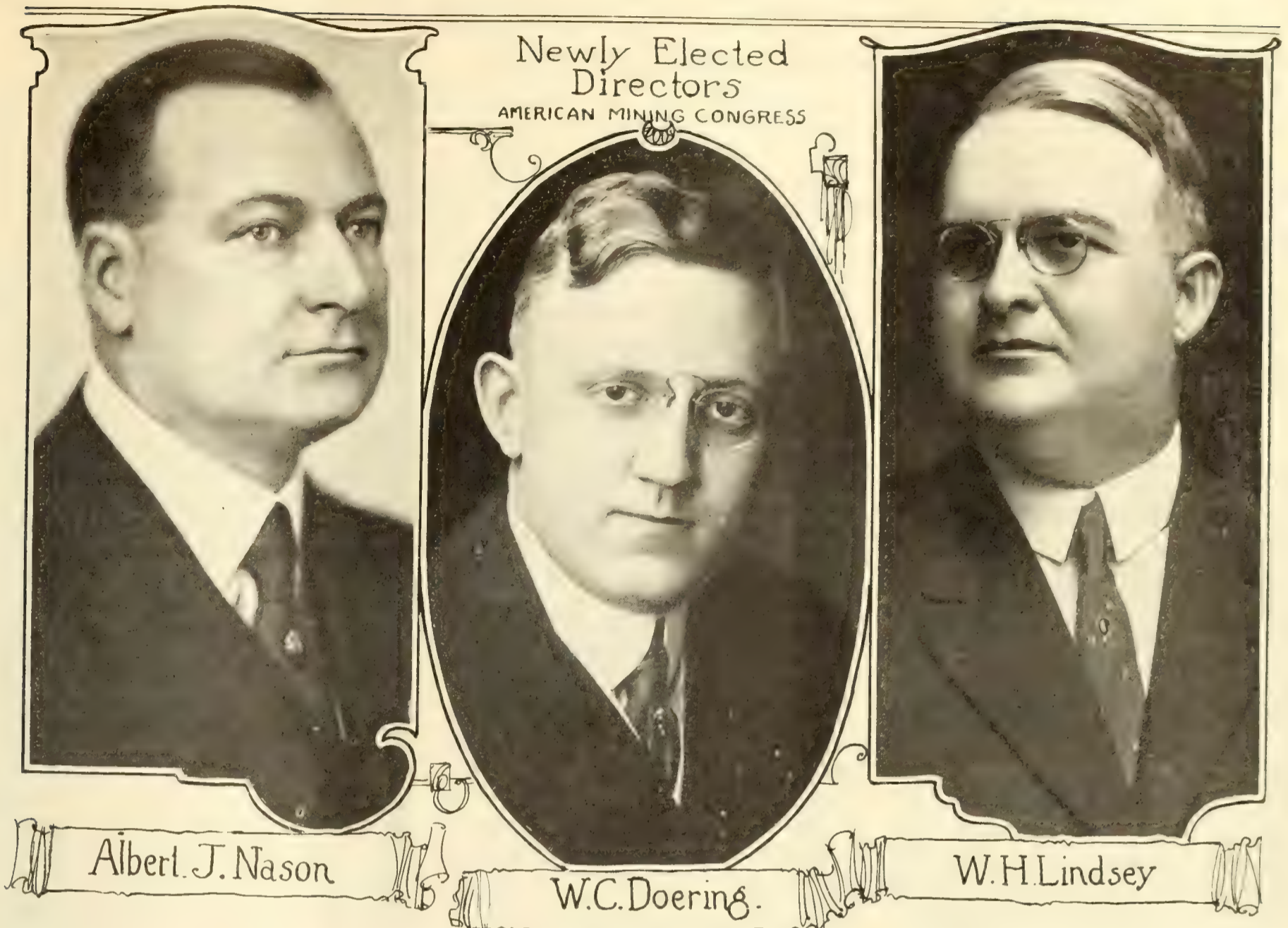
A program of vocal numbers presented rounded out the evening.

The second session was held Tuesday morning, October 10, with W. R. Woodford, president, Rail and River Coal Company, Cleveland, presiding. James F. Callbreath, secretary of the American Mining Congress, outlined the work accomplished by the Organization, its plans for the future, and some of the problems confronting the convention. Carmi A. Thompson, Tod-Stambaugh Company, Cleveland, discussed mine taxation and employes' wages. H. W. Seaman, Chicago, a director of the Mining Congress, analyzed the issues with which the gold mining industry is concerned. Mr. Woodford reviewed mining conditions generally in opening the session.

INDUSTRIAL RELATIONS DISCUSSED

The third general session was called on Tuesday evening, with industrial relations standing as the main topic of discussion. For the first time in the history of industry, men who have been making a close study of these relationships for many years with a view to elimination of friction were able to present their views at a session of a major industry's convention. Prominent among the speakers on this subject were W. A. Grieves, of the Jeffrey Manufacturing Co., Columbus, Ohio, and Arthur Young, vice-president of the International Harvester Company.

The national oil shale conference opened the first of its sessions Tuesday afternoon, Dr. Victor C. Alderson presiding. Committee reports were presented to the conference and papers of high technical and economic interest to the delegates were presented by several authorities. The work of this conference



was concluded the following day, being capped by the framing of a resolution presented to and adopted by the convention in which intensified research into shale problems by the government was urged, bearing also a warning against fake shale promotion schemes.

The standardization conference also opened on Tuesday, with Colonel W. R. Roberts, national chairman of the standardization branch, presiding. The conference was continued on Thursday, when standardization was made the subject of discussion at the fifth general session of the convention, completion of consideration of reports being accomplished at that time, and a resolution, accepted by the convention being framed.

ADDITIONAL TAX SESSIONS

The tax conference continued its sessions during these days, hearing representatives of the Bureau of Internal Revenue and others point out the complicated points of tax administration and outline other features connected with these vital deliberations.

The fourth general session, held Wednesday morning, was devoted to a discussion of the coal industry's problems. Michael Gallagher, president of the Pitts-

burgh Vein Coal Operators' Association, presiding. The meeting was addressed by J. G. Bradley, former president of the National Coal Association; Charles E. Maurer, vice-president of the American Mining Congress for the State of

THE NEWLY-ELECTED OFFICERS

President—Sidney J. Jennings, New York.

First Vice-President—Daniel B. Wentz, Philadelphia.

Second Vice-President—H. W. Seaman, Chicago.

Third Vice-President—E. L. Doheny, Los Angeles.

Members of Board of Directors—Albert J. Nason, Chicago; Wm. H. Lindsey, Nashville, Tenn.; W. C. Doering, St. Louis, Mo.; Daniel B. Wentz (re-elected).

Executive Committee—Sidney Jennings, Daniel B. Wentz, Denver, Colo.; Robert Linton, New York.

Ohio, and James A. Emery, of the National Association of Manufacturers, whose address had industrial relations as its topic.

The annual meeting of members of the Mining Congress was held in the convention hall on Wednesday night. The exhibitors' smoker was staged later in the evening.

Addresses by W. S. Culbertson, vice-chairman of the U. S. Tariff Commission, and Judge John H. Crawford, of Kansas, featured the general session on Thursday evening. Mr. Culbertson's address was of special importance because it carried first public announcement of President Harding's order relative to administration of the new tariff law. Judge Crawford discussed the operation of the Kansas Industrial Court and the question of industrial relations in general.

The final general session was held Friday morning, when the business of the convention was brought to a conclusion, twenty resolutions having previously been received from the resolutions committee and adopted by the convention. It was at this session that the result of the election of officers for the coming year was announced, as well as the fact that the next convention would be held in Milwaukee, Wis.

G. A. O'Reilly, vice-president, Irving National Bank, New York, addressed the Friday morning session, his topic being

"Is America Living Up to Its Responsibilities?" Mr. O'Reilly's address swung around the oft-repeated plaint of those who criticize without possessing knowledge—"Why don't they do something?" The speaker concluded with these words: "Our commercial credits are still being extended and will continue to be. We are doing things. We are doing things that count, and, when you meet, my friends, some one who says, 'Why don't they do something' treat him at least not with the greatest of politeness."

Herbert Wilson Smith, chief, tariff division of the American Mining Congress, addressed the session, his subject being "A Protective Tariff for the Mineral Industry," and F. W. Fenn, of the National Automobile Chamber of Commerce, spoke on the "Importance of Motorized Transportation to Efficient Mining."

On Friday night, the convention was officially brought to a close with the silver anniversary banquet at the Hotel Hollenden. Richard F. Grant, chairman of the general arrangements committee of Cleveland business men, was toastmaster. Among the speakers was Elisha J. Lee, vice-president of the Pennsylvania lines, who declared that railroad labor must surrender the right to strike if the railway situation is to be stabilized and "the rights of the people to uninterrupted transportation service are to be permanently secured." Judge Ira E. Robinson, formerly on the Supreme Court bench of the State of West Virginia, now War Minerals Relief Commissioner under Secretary of the Interior Fall, discussed the relationship of the government to the individual, declaring that any tendency toward paternalism stands in effect as an approach in degree toward communism.

Entertainment features and informal luncheons were given many places throughout the program of the week's activities.

PRESIDENT LORING NOT ABLE TO ATTEND

WILLIAM J. LORING, president of the American Mining Congress for two terms, extending over the same number of years, was unable to attend the convention, his appointment by the Governor of California as a member of the investigating committee in the Argonaut disaster monopolizing his attention at the time. The following message from Mr. Loring was read:

"I am unable to express my deep disappointment at my inability to attend the twenty-fifth annual session of the American Mining Congress, of which I have the honor to be president. I had planned to continue the devotion of my every energy to this work, but my appointment by the Governor of California upon the investi-

gating committee in the Argonaut disaster makes it my plain duty to remain here and serve the mining industry.

"In the formulation of recommendations for the prevention of similar disasters, I am hopeful that I may accomplish something of lasting benefit to the industry even greater than anything which might result from my presence in Cleveland.

"Please accept my sincere best wishes for an eventful and successful session."

President Harding Declares Industry Must Heed Human Element

THE VITAL necessity with which American industry is faced, demanding that efforts be made to insure harmony in industrial relations, was placed by President Harding before the twenty-fifth annual convention of the American Mining Congress. In choosing this subject to carry the strength of his message to the assembled delegates, the President expressed his views along lines of thought pervading the convention.

The President's communication was read at the opening of the convention. The text follows:

"Just a word to confirm my personal statement to you, of my regret that it is not possible for me to accept the invitation to attend the American Mining Congress and National Exposition of Mines and Mine Equipment.

"I do not need to add anything to what I have already said to you about my interest in this gathering. The American Mining Congress has for many years maintained a leadership in behalf of wise policies in dealing with our national mineral welfare, and I am sure that the forthcoming convention will continue to maintain that attitude. All the world, nowadays, is heard crying out for supplies of raw materials for its commerce and industries.

"The riches of our American soil have been drawn up in this connection, with a liberality that verges on prodigality, and still the demand is for more and yet more. Our problem of wise liberality tempered by a proper purpose of conserving these great resources should always be in our mind. It is not desirable that we should be either extravagant on one side or niggardly on the other.

"Above all, it is vitally necessary that if we are to make the most of our rich endowment in this realm we must seek to develop it with a full regard for the human interests involved.

"Our natural resources will not in the end have served us their greater purpose if we find that in their development we have exploited the great army of humanity which is dependent upon these industries."

HOOVER OUTLINES ILLS OF COAL INDUSTRY

SECRETARY of Commerce Hoover offered a preface to the weeks and months of the immediate future during which the coal industry will constantly be under the glare of close analysis when he outlined in a telegram to the Cleveland convention of the American Mining Congress the reasons for "the most far-reaching instability in our bituminous industry." He cited these reasons:

1. Chronically insufficient transportation at critical times and the lack of storage.
2. Over-extension of capacity.
3. Variations in employment of 100 to 300 days a year.
4. Consequent variation in profits from feast to famine.
5. Excessive numbers of mines and workers.

Existence of these conditions presents a challenge to "the intelligence and courage of the mining industry" to find solutions, he declared, at the same time asking the mining congress to help the government through cooperation with the President's fact-finding commission. The congress pledged its aid in this respect through an adopted resolution which provided for appointment of a committee to work along these lines.

"This situation is the fault of neither the operators nor the workers," declared Secretary Hoover in his communication, which was read before a general session of the convention. "It is the final result of forces that have been accumulating for years and have now reached the point where they constitute a danger to our social as well as economic welfare.

"They arise to a considerable degree from the indirect effect of the government's regulation of business and railways, chronically insufficient transportation at critical times and the lack of storage.

"The overexpansion of capacity, the irregular operation of the mines, the excessive numbers of mines and workers, both intermittently employed, the variation in annual employment of 100 to 300 days a year in different districts, followed by necessary demands for daily earnings that will constitute an annual living wage, variation of profits from feast to famine—all these are unique in our bituminous industry."

Compliance with Secretary Hoover's request was embodied by the convention in a unanimously adopted resolution pledging cooperation and authorizing appointment of a committee to represent the organization in pursuing this course. The body of the resolution was devoted to a statement of recognition of existing conditions and the far-reaching effect they exert upon the country.

VALIANT MOVE MADE FOR INDUSTRIAL HARMONY

*First Step Taken in Campaign to Bring Employer and Workman Into Cooperation—
Mining Congress Convention Initiates Action in Spirit of Practical Idealism—
Permanent Division Organized for Educational Work*

INITIATION of the first effort to be made by a major industrial organization in this country for the purpose of securing a greater degree of harmony in industrial relations between employer and workman was accomplished by the Twenty-fifth Annual Convention of the American Mining Congress. Specifically, this effort was embodied in final organization of the newly-created Industrial Relations Division of the congress: broadly, it took the form of the first move in an educative campaign that is to be carried on with determination by the organization.

Having thus been brought to the attention of, and thoroughly discussed by, a national gathering of representatives of an industry employing a million and a half men, the movement has received an impetus which promises to carry it even beyond possibilities being forecasted by its most optimistic sponsors. A long and intensive educational campaign will have to be used if the work is to be successful, and this fact is destined to make progress appear rather slow at times. If, however, the spirit in which the Cleveland convention moved lends its force to this campaign a steady advance will be made.

NECESSITY FOR CHANGE

Speakers told the convention of the necessity for a radical change in the present trend if the factors involved in operations of industry are to avoid the crash of public opinion brought down upon their heads by chaotic condition certain to follow intolerancies.

President Harding, in his message to the convention, read at the opening session, pointed out this necessity for recognition of the human element. "Above all," the President declared, "it is vitally necessary that if we are to make the

most of our rich endowment in this realm we must seek to develop it with a full regard for the human interests involved. Our natural resources will not in the end have served us their greatest purpose if we are to find that in their development we have exploited the great army of humanity which is dependent upon these industries."

Newton D. Baker, former Secretary of War, now president of the Cleveland Chamber of Commerce, in delivering the address of welcome to the delegates at the opening session of the convention, stressed the necessity for a cooperative effort to inspire an increased confidence to be exercised by the elements engaged in industrial operations.

"There rests upon a great industry like this," Mr. Baker declared, "not merely upon the operator but also upon the operative, for in this responsibility they are inseparable partners—there rests upon the shoulders of those engaged in the mining industry an obligation to the country of which they are common citizens that they shall devote themselves to the devising of a spirit of cooperation which will bear fruit in arrangements of concord and bring to this industry that sort of justice and prosperity for all engaged in it out of which regulations automatically will grow and be enforced."

Only one thing remains to be added by the mining industry to the gifts its ingenuity and resourcefulness already have passed on to civilization, Mr. Baker declared, and that is "the stability, the certainty, the endurance that will come from our adding the same perfection of beauty and justice to the personal relations involved that we have already achieved in building up the mechanical side of industry."

Driving through the entire discussion of this subject at the convention was the conviction that this is the precise time for capitalization of experience already gained by individual companies

which have been operating their plants by application of this principle within their particular spheres. Representatives of firms having made notable progress in this direction were present to tell the delegates the methods adopted and the results achieved.

W. A. Grieves, newly-elected chairman of the recently-organized Division of Industrial Cooperation of the American Mining Congress, outlined the remarkable success attending the efforts for industrial cooperation carried on by the Jeffrey Manufacturing Company, Columbus, of which he is vice-president.

DETERMINATION IS EMPHASIZED

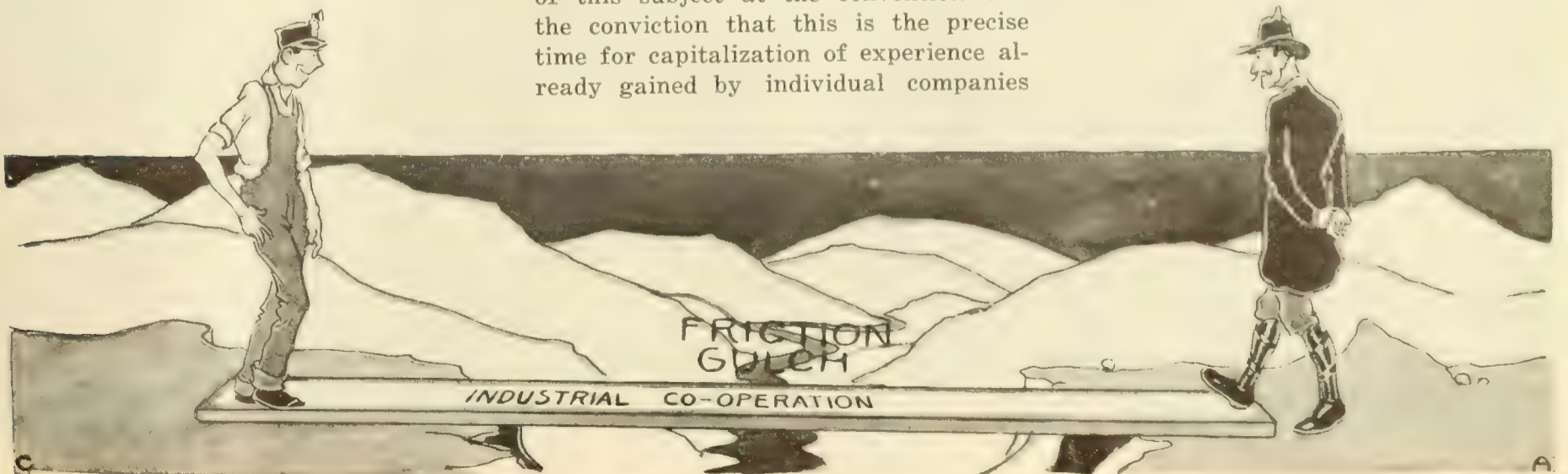
Declaring that the Mining Congress was determined to apply itself with energy to this campaign, Mr. Grieves emphasized the point that the movement is not tinged with impractical idealism. "It is a dollars and cents proposition," he stated.

"It is a good business proposition. The best business is the best humanity and vice versa.

"We are prone to overlook the perfectly obvious, and the obvious in this regard is the necessity of recognizing fully the human element. Operators should take the lead in educating their men to the principles of mutual dependence. The relationship must be one of inter-dependence and all elements must be awakened to this fact.

"There is no antagonism to unions. Unions have their place in the industrial scheme. The necessity of unions was brought about by the fact that industry has been lax to a large extent in recognizing the value of education as applied to industrial cooperation. Cooperation is as much a part of a day's work as any other element of industrial operation.

"There is no panacea which can be ap-



plied generally. There are no two methods of industrial cooperation. Each individual operation carries its own distinctive conditions and must establish intimate personal contact between employer and workmen.

"Many of your operators already have successfully applied this principle to your industrial activities and it remains only for a thorough educative campaign to accomplish similar results on a broad scale."

Arthur Young, of the International Harvester Company, described at length the plan of industrial cooperation adopted by that organization, which, while primarily a manufacturing concern, owns iron mines, coal mines, blast furnaces and steel mills.

Mr. Young, who is manager of his company's industrial relations work, outlined features of its plan to the delegates as follows:

SUCCESSFUL PLAN EXPLAINED

First. An employes' benefit association, whereby, through the payment of a small sum weekly—a maximum of 48 cents per week—the employe is protected against loss of earning power through sickness or accidents, and his family benefits slightly in case of his death. The Harvester Company donates \$50,000 a year towards the upkeep of that association and assumes all the overhead.

Second, a pension plan, whereby, at the completion of a certain age and service requirements, a fairly generous pension is provided, a maximum of

\$2,100 a year based on 1¼ percent of the earnings over a ten-year period or ten years' service.

Third, a compensation or stock ownership plan, which provided that after 7 percent on the invested capital is set aside as a fair return to capital, the balance of the surplus earnings is divided between stockholders of the business and the employes, the stockholders receiving 40 percent and the employe group 60 percent. Of that 60 percent, two thirds goes to the employes and one third to the managerial group.

Fourth, the industrial council plan which assures participation by the employes through their representatives with the management on an absolute fifty-fifty basis in the discussion and shaping of all of the policies of the company or matters of mutual interest.

The heart and core of this plan is a "works council" in each of the twenty-four plans of the International Harvester Company. This council is composed of a number of employe representatives elected by secret ballot of the employes. This plan provides for the recall of employe representatives by a majority petition or an election. It safe-guards their freedom of action as representatives by an ironclad guarantee. If at any time an employe representative alleges discrimination in the matter of his employment because of his acts as representative, he may appeal directly to the president of the company and if he is not satisfied with the president's settlement of the matter he is then assured of arbitration before a disinterested non-partisan arbitrator and

the ruling of the arbitrator in such cases would be binding.

REPRESENTATIVES ARE NAMED

The plan provides that the management shall name a number of representatives on the works council not greater than the total elected employe representatives. Management representatives are chosen from the local management group, usually the superintendent, assistant, master mechanic, auditor, and so on. The fifty-fifty participation in power in the works council is guaranteed by means of a panel vote; that is, in formal voting, a majority of the employe representatives determines the action of their side as a whole and they cast one ballot for their side, and similarly a majority of the management representatives determines the action of their side and their unit vote is equal exactly to the employe representatives' vote, no matter what the numerical strength of the two sides may be.

It is frankly the function of the council to shape the policy of the company in all matters of mutual interest, including wages, hours, working conditions and the usual controversial matters, as well as health, safety and accident prevention and all of the so-called non-controversial matters.

Mr. Young brought out most forcibly by numerous examples the thoroughness of the employes' desires to cooperate with management. He declared that in three and one-half years of experience, with twenty-four works councils meeting regularly once a month and many times in special sessions, participating on a fifty-fifty basis in determination of



ANNUAL BANQUET, AMERICAN MINING CONGRESS

policies of the company, only five appeals have been taken to the president out of the thousands of propositions that have come before those councils. Settlements have been made within the local works councils in all but these five cases.

Through that system men and management have been drawn closer together and that is really the great thing we have seen in this works council plan—our plan of industrial representation. It gives a medium of meeting employes or their representatives face to face for frank discussion relationship.

Progress of the discussion enabled the convention to become familiar in a more intimate degree with the operations of the plan adopted by the Colorado Fuel & Iron Company which embodies a great example for application of this work to elements of the mining industry. This system, known as the "Rockefeller plan," has been adopted in varying degree by a large number of mining companies and organizations in other lines of industry, including the Pennsylvania Railroad System, the Phelps-Dodge Corporation, the International Harvester Company and others. Its principles were outlined by Mr. Weitzel in charge of this work at the properties of the Colorado Fuel & Iron Co.

FOREMAN IN KEY POSITION

Mr. Weitzel placed the foreman in the position of being the most important factor in development of a successful industrial cooperation plan.

"The foreman passes upon matters which do not come to the attention of the superintendent and higher executives," declared Mr. Weitzel in pointing out the

strategic importance of the individual who occupies this key position.

"The foreman is the boss. Anyone who wants to start a plan of representation among the employes must not forget either the foreman or the superintendent. They must occupy a position in line before the effort can assume a wider spread, since they occupy the point of contact.

"An industrial representation plan does not have a chance in the world unless interpretations of the company's policy pass through to the men and the men's views are furnished with a channel of communication to the company. It is this inter-communication that furnishes the material for construction of a common plane upon which the two industrial elements can meet. Realization of this fact emphasizes the importance of the foreman in this plan, since it is through him that these exchanges must pass.

"We have found that by giving responsibility to employes they accept it and work the matter out satisfactorily."

Mr. Weitzel stressed the point which previously had been emphasized by Mr. Young—that employes display a fairness in the determination of their relations with the management under this system.

Superficial thought might feel that nothing in common exists between a discussion of industrial cooperation and points developed in an address having for its subject the operation of a compulsory arbitration court. That the two movements do possess a common factor is demonstrated, however, by an analysis

of the address made before the convention by Judge Crawford, of the Kansas Industrial Court. Efforts of this tribunal, it was shown, have developed the fact that the existing antagonism found in industrial circles cannot continue without inviting dangerous conditions, the outcome of which is beyond forecast. This fact, developed by the cold scrutiny of a court's administration, emphasizes the necessity for a harmonization that will be sound and thorough because of it rests upon a permanent ground work built up by educative measures.

STRIKES HOLD MENACE

Judge Crawford said, in part:

"A continual series of strikes to settle labor disputes not only is costly and results in widespread suffering and cessation of industry and even the loss of human lives, but greater than all these it is creating a class hatred that, if allowed to exist and grow in this country, is dangerous for government and civilization. The present method of settling our labor disputes, of finding them out as we do, just means in the not far distant future, if we keep it up, that this country will be in a civil war. The Kansas Industrial Court law has been successful. In the big coal strike we have just gone through the Industrial Court made it possible in the Pittsburgh field for 2,300 union miners to go back to work and produce what coal the State of Kansas needed and today with their contract signed a 100 percent union district. There isn't a miner there but what knows if he wants to work he can go to work unmolested and unafraid because we restored civil government in that country."



HOLLENDEN HOTEL, CLEVELAND, OHIO, OCTOBER 13, 1922

ADVOCATES MEASURES TO PREVENT TIE-UPS

Charles E. Maurer, Addressing Cleveland Convention, Urges Regulation Of Strikes Rather Than of Industry—Predicts New Coal Strike Unless Conditions Change

ADVOCATING the regulation of the strike instead of the coal operators as a means of preventing continued interference, more legislation



C. E. Maurer

and recurring industrial tie-ups, Charles E. Maurer declared in an address before the general sessions of the Mining Congress convention, that unless strenuous steps are taken by the industry before next April 1, there will be a repetition of the strike troubles that disturbed the United States last spring. One of the chief underlying causes of all the legislation, all the interference and all the evils that beset the coal operators is the United Mine Workers of America, and the propensity of its members to strike, under the direction of John Lewis, according to Mr. Maurer.

ARE HELD RESPONSIBLE

"And you are held responsible for it in Washington," he said. "Now why not as business men get before the responsible men in Congress and make them realize that the thing that is responsible for these conditions must first be removed, and we won't need any commissions in Washington to look after our affairs. This is the cause! You would have had no clamor today if it wasn't for the fact that John Lewis called the miners out, and think of the damnable position he took all the way through! Never in the history of the United Mine Workers have I seen a strike last where the public demanded coal, that the International president didn't call his policy committee together and tell the operators that desired to work, 'There is a scale of wages, go to work if you want to.'

"But John Lewis didn't do it. There was never a time from the first day of April until the time that the so-called contract was signed in Cleveland that John Lewis could not have called his policy committee together and relieved the situation so far as coal was concerned, by doing what other national organizations have done. Mr. Lewis is sitting over here, he knew what they did in 1910 when they didn't agree at Cin-

cinnati—they formulated a scale of wages. The men went to work. In 1906 when we didn't agree under John Mitchell, the policy committee was called together and a scale of wages was formulated and we went to work. But not so with John Lewis! John Lewis was determined that he would show the people of the United States that he was the high mogul that controlled their destinies."

Failure of the United Mine Workers to keep their agreement and carry out their contract at various times since 1916 in each instance resulted in a great clamor for legislation to control the mines, Mr. Maurer said. The old interstate agreement in the central competitive field, formed in 1898 was effective until 1916 and both labor and operators took pride in the fact that their contracts were always carried out. There has been trouble since 1916, he declared, with revision of contracts, broken contracts and strikes, each dissention leading to demands for legislation.

"In 1919 all kinds of bills were introduced in Congress," the speaker said. "But the minute the mines started to work, they were dying a natural death and we were getting back to the good old times we had prior to 1916 when the only think we had to contend with was a little regulation of our mining laws with reference to mine operation. But on April 1 of this year again every miner was called out and they responded to the call. The same clamor for legislation resulted; the same cry that these men who control this business in the United States are not capable of controlling it.

"The United Mine Workers have asked for government control. There isn't any easier way they can get the government to step in and take control of your property than by creating situations like they have created in the last three years, is there?"

Referring to a statement credited to John Lewis to the effect that the time is not yet ripe for government control, Mr. Maurer declared if there is one more strike government control will result.

"They are shaping their affairs (referring to the United Mine Workers) to one end—and that is that the United Mine Workers, through the government, will control not only the union mines, but every mine in the United States."

Admitting that the principle is recognized of the right of the public welfare to come before the single right of property where basic commodities such as coal are concerned, Mr. Maurer said the

coal men cannot stand idle until the first of next April and say "if we can't make a contract, we are going to shut these mines down, and close them forever," because the public will not allow such closing again.

"Did anybody ever hear of legislation to regulate the United Mine Workers? Did anybody ever hear anybody down in Congress say that while people as individuals have the right to quit, no combinations of individuals have the right to strike and cripple an industry? And yet, I think it would be a good law, and good common sense. Nobody will deny the right you and I have, or any other man, to hire out to whom he pleases. Nobody will deny our right to quit if we see fit, if we are not under contract. The right of both employer and employe is constitutionally recognized, but I don't believe that the individuals that are employes of a great railroad, on whom depend the great transportation facilities of this country have a right to vote as to whether they will tie up that industry and starve women and children. Individually they have the right to quit. Individually somebody else has a right to take their places."

SCANS HORIZON OF FUTURE

Referring to the recent appointment of committeemen from each district to meet with representatives of the United Mine Workers before next April to discuss next year's contract, Mr. Maurer expressed doubt as to the outcome of such meeting, asserting that in his opinion a repetition of conditions that existed last April will be brought about. He said:

"My opinion is that by the first of April those districts that regulate the price of their labor by the law of supply and demand will be able to meet market conditions by reducing their labor. The people in the central competitive field will find themselves with a low demand for coal, a high wage scale and the knowledge that they cannot hope to renew the old contract and do business, just as they were last April. And, I want to say right now that the miners will not make a scale of wages based on a reduction, without a fight. When you have met the demands of the miners and find you cannot get anything better than their demands and the situation does not warrant the present wage, then it is time to quit and quit for good."

In concluding, Mr. Maurer asserted that, in view of the public rights, the industry in the central competitive states must before April so shape itself that if it is unable to take care of its own affairs in the face of a new year's contract, it must get such assistance as will give it at least protection.

NEW DAY IN WESTERN MINING IS FORESEEN

Representatives of the Metal Mining Industry, Assembled at Cleveland Convention, Lay Definite Plans for Coping With Problems—Benefits Brought By Organization of Western Division Already One Evidence

By BURTON BUNCH
Western Secretary, American Mining Congress

SKIES WERE gray much of the time in Cleveland, but the drab atmosphere could not insert itself into the spirits of western men at the convention of the American Mining Congress. They visualized, through the clouds overhung, the future sun; a symbol of brighter days to come in the mining industry. Just as there was no certainty as to when the Ohio mist would lift, so was there no definite day agreed upon as the hour of revival in the west.

But representative men from the Rockies and the Pacific coast are as certain of a new day in mining as they are of a new sun.

They said so themselves!

Grouped in the lobby and corridors of the Hollenden; at dinner or luncheon and even at breakfast; in the exhibit booths of the exposition; in committee rooms where the western division met—everywhere they discussed the present; speculated as to the future, and based their optimism on the experiences of the past and the definite plans in which they and their associates, through the American Mining Congress, are to take part.

THE LABOR SITUATION

"We are short of man-power," one of them said, "and I am not sure what the outcome will be. Our western division resolution, suggesting some changes in the immigration laws, even if it should result in specific regulations, will not bring immediate relief. We must not permit ourselves to be too hopeful on this score, but the matter is worthy of consideration. A danger is in the possible misconstruction of our intent. Certainly we ask for no complete revision of the laws governing immigration that would 'drop the bars,' but prefer, rather, some plan by which the right of 'selection' can be exercised in sending new men to this country.

"There is, however, a labor relief in sight in many states, because the unprecedented number of men working on our public highways will be materially cut down by winter's interruptions, and many of these road men will be available to us. There is promise, then, that our most immediate problem having to do with the physical production of our ores will be partly solved within a short time. If only we can affect a permanent solution by the time the road workers

and the ranch workers decide to return to summer pursuits next year!"

"We ought to have in the metal mines some of the over-supply of coal mine workers," another declared, "but this economic canker-sore is beyond our present power to remedy. I agree with you that a partial relief of the labor shortage will put us on the way to production, and with that out of the way, other features of the industry promise improvement before many months.

PROMPT ACTION PROVIDED

"I am impressed with the value of our new means for cooperation with the Mining Congress. Surely, the efforts of a western secretary, representing the Washington office, in conjunction with our own official acts as a western division, studying peculiar western problems will make it possible for us to 'get action' promptly on those things concerning which we must act.

"We know the 'insurance value,' if you please, of the work that has been done, and is being done, by Mr. Callbreath and his staff in Washington, where he is in touch with all developments that can have any effect, either favorably or adversely, on the mining industry. Those of us who are subscribers to the service of the Washington office—I mean the companies which independent of our state organizations, buy the constant service of all departments, with their periodical, direct reports—have the privilege of calling for the personal attention of the chiefs of the various divisions to our individual problems. My own company, for instance, has received enough direct benefit through the work of the tax division, in actual money saved and returned from the government, to pay our proportion of the organization's expense as long as we are in operation. We have put the Mining Congress permanently on our payroll.

"And, that makes no reference to the success of the mineral tariffs division in guaranteeing the inclusion in the new tariff law, of favorable schedules on the minerals we produce. Mines in our territory which have long been idle may now produce zinc, lead, manganese, tungsten and other ores with profit. This means renewed confidence, and it means much to the manufacturers and distributors of machinery and supplies who have waited

long with us for a return of profitable mining conditions. Even now, these manufacturers say, their business is improving, and inquiries for quotations are increasing in number."

AN UNQUESTIONABLE FACT

"No one can question the fact that but for the Mining Congress many of us would not be in business this day," came with emphasis from an operator whose savings under the provisions of the depletion clause in the revenue code have been sufficiently large to keep his property working. "In my opinion, no mining company in the United States has a right to benefit by general activities of the Mining Congress such as the efforts which resulted in the inclusion of this clause, without sharing the cost of the organization's upkeep. That is, as long as they have their doors open for business. Some of them would have closed up long ago, otherwise. If they finally pull out, the management cannot conscientiously claim all the credit."

"There's just a point in which I am interested, as emphasizing the possibilities of the future in the west," interjected an executive who had never attended a convention before, "and that is that if these helpful things have been done in the past, who can tell what serious new matter may become acutely dangerous overnight to threaten the industry? I wouldn't know of such a thing for days maybe, but I am secure in the knowledge that the Washington office would perhaps have been studying the matter for weeks or months.

"Take silver, for instance, and its probable position by the time all purchases possible have been made under the Pittman act. We know the silver question is now under consideration, and from the type of men discussing it, aided by the Mining Congress in important ways, we are hopeful that advantageous conclusions will be reached, and a workable plan put into effect.

OF REAL VALUE

"The western division—which means us—can assist much in the working out of any plan which will require action in the national capital for its authority, whether it be a matter of legislation on taxes, tariffs, immigration, gold and silver, or what not. We are now prepared

to meet at any time, on short notice and in our own environment, and consider the questions of particular interest to us. We in one state can be advised through contact with the western secretary, what conditions obtain in another state.

"In our separate states, of course, we may continue to act independently on local matters, calling upon men and organizations in other states, or calling upon the national office only when we feel a need for outside assistance. We have been shown that our neighbors and Mr. Callbreath's office, also, are ready to answer the calls."

MR. BUNCH'S OBSERVATIONS

Four months of travel in the west, where I visited a number of the important mining cities, enabled me to form conclusions quite in accord with the views expressed by the gentlemen quoted above. With their problems of technical nature; their cost-systems; their geology and ore reserves I had no opportunity to interest myself. Such problems are individual to the company affected, and while their successful or unsuccessful solution determines profit or loss and is very important, it was with the general situation in the west that I was concerned.

Particularly those matters of economics in which all mines in any branch of the industry are interested and which go back through the state organizations or direct to the Washington office of the Mining Congress for study and action before Congress or the various departments of government, appealed to me. I am convinced that no such matter can be successfully adjusted without loss of time and money and danger of disaster, unless the agency provided by the American Mining Congress, and proved by twenty-five years of activity to be effective, is used.

The west can use this agency now to better effect than ever before. The creation of a Western Division, with its officers and members chosen from among the leaders in the separate states provided a direct method by which the western operators may arrange for distinctive western meetings to study distinctive western difficulties, which may include any of the large questions of the government having to do with mining, directly or indirectly. The western division has named its own secretary, in the person of A. G. MacKenzie, who is also secretary of the Utah Chapter, at Salt Lake City. The chairman of the board of governors is D. D. Muir, Jr., also of Salt Lake City.

It is not contemplated that the work of the western secretary will include the details of the western division offices, but rather that he will keep in touch with

conditions in all states which have membership, through their appointed board members, in the western division, and to see that facts concerning any serious or interesting condition in one state are communicated to the other states. He will assist in arranging meetings and conferences where such assistance is needed, and will be available to any of the states if his presence, as a link with the Washington office is desirable. His headquarters will be in Salt Lake City, where, for the next year at least, he will be in touch with the secretary of the western division at all times, to receive and act upon suggestions that may originate within the division for the good of the industry.

One of the duties of the western secretary in his travels will be to "sell" the Mining Congress to the operators and individuals in the west who should be, but who are not now, supporters of the organization. The Mining Congress for many years has profitably done its work at the expense of those whose fairness of judgment, and whose appreciation of service rendered have dictated the payment of their share of operation.

Other companies, deriving just as

great a benefit from the activities of the Congress have failed or refused to meet their fair proportion of the very necessary costs, even though it is plain that in many cases a single saving, or the prevention of the enactment of a single evil law, gave them direct benefit worth more than enough to pay the Mining Congress costs for years. Some of these companies have been "riding on the band wagon, but refuse to toot a horn."

PLAN BEING FORMULATED

A tentative new plan of financing the Mining Congress is being worked out in Washington so that its necessary income may be received in a business-like way from all the industry, rather than in intermittent floods at some seasons, and in dribbles at others. Under this plan there would be no necessity for calls for special funds, but all Mining Congress activities, east and west, would be provided for in the general budget. Some of the time of the western secretary will be spent in making known the details of the financial plan to state organizations and individual operators or companies, to the end that the work of the organization may be more smoothly carried on in the future.

MINING INDUSTRY'S POWER OUTLINED

Agricultural Products Draw More Attention as Freight Tonnage Than Mineral Output Which Furnishes Far Greater Traffic, Declares Elisha J. Lee

POPULAR CONCEPTION does not generally appreciate the vast tonnage supplied by the mining industry for rail transportation and therefore fails to gauge the influence which the degree of prosperity of this industry exerts upon the financial condition of the roads and therefore upon the general economic welfare of the entire nation, Elisha J. Lee, vice-president of the Pennsylvania lines, indicated in his address delivered at the annual banquet of the American Mining Congress held at the conclusion of that organizations' recent convention in Cleveland.

While wide-spread interest is displayed every year in the probable yield of farm products and the probable effect which their abundance or scarcity will have upon railroad tariffs, the public generally fails to accord more than a trace of the proportionate consideration which should be given the relationship between the mining industry and the railroad. Consequently, while great furors spring into existence when crop shortages indicate reflecting conditions in rail rates, little attention is paid to the mining industry's part in stabilizing these rates. Straight through to the top

strata of the government is this attitude maintained, and thus officials in Washington hear a constant plea for aid for the farmers, while the mining industry goes along, striving as best it can to maintain its prosperity in the face of a lack of outside interest such as that accorded the agricultural industry.

"How many people realize that the mines of this country give the railroads every year an originating tonnage over five times greater than that of all forms of agriculture combined?" Mr. Lee inquired during the course of his address.

"The fact is that products of the mines are not only the greatest single element entering into the traffic of our railroads, but make up more than one-half of the total tonnage transported, and exceed by three times the traffic volume of their nearest competitors in this respect, the products of manufacture," he continued.

"On the particular railroad in whose service I have spent my own working life, products of the mines supply nearly two-thirds of our entire originating freight traffic; their volume is three and one-quarter times in excess of the traffic in manufactured products, and more than eleven times larger than the originating tonnage in products of agriculture."

EXPLAINING THE RUBBER-BAND TARIFF

Authorities Outline Administration of New Law and Predict Effect It Will Have Upon The Mining Industry—Tariff Commission Official Tells Operators How Necessity of Sweeping Revisions is Eliminated

EVERY RAMIFICATION of industry is affected by some rate included in the new tariff schedules, W. S. Culbertson, vice-chairman of the United States Tariff Commission, told a special session of the American Mining Congress convention in Cleveland last month, in discussing his subject, "The Practical Working of the Flexible Tariff Provision." How these rates affect the mining industry was explained by Herbert Wilson Smith, chief of the Mineral Tariffs Division of the Mining Congress, in a later session devoted to a discussion of tariffs. Mr. Smith's subject was "A Protective Tariff for the Mining Industry."

Mr. Culbertson agreed with the statement of President Harding as to the importance of Section 315, Title 3, of the Tariff Act, which provides that the President may increase or decrease any tariff rate in the bill as it was passed on September 31, 1922, within certain limits. The President's expression was to the effect that this single provision was the most important progressive step in tariff making that had been made in a century. Mr. Culbertson explained the limitations provided and detailed clearly how the Tariff Commission may administer the provision.

RAPID CHANGES BREED COMPLEXITY

"Rapidly changing economic conditions, the growing complexity of American industrial life and the increasing burdens on Congress of general tariff revision," said Mr. Culbertson, "have led Congress to turn over to the President, with the cooperation of the Tariff Commission, the adjustment of individual tariff rates in accordance with a definite rule. The principle has been laid down by Congress to guide the President in adjusting tariff rates, and it has provided a judicial

method of finding the facts and for the application to them of the rule laid down."

When economic conditions require the change of a tariff rate it is not necessary under the new system to await a general revision of the tariff in order to obtain relief. Section 315 provides that any rate of duty may be increased or decreased 50 percent of such rate, if necessary to equalize the difference in costs of production here and in the principal competing country.

Mr. Culbertson was of the opinion that the phrase "cost of production" will probably be broadly construed. All conditions of production, prices and other economic advantages and disadvantages in competition will be taken into consideration, and the Commission, which must pass upon all claims for revision and make all investigations before proclamation may be issued by the President, has plenary power to examine books and other records, so that facts as to costs may be arrived at with reasonable certainty.

RESTRAINT PLACED BY ACT

The President is not permitted to transfer an article from the free list to the dutiable, or vice versa. He may not change the form of duty. If it is ad valorem, he cannot change it to a duty on weight or yardage, and if it is a duty on weight or yardage, or quantity, he cannot change it to an ad valorem basis. In case this part of the

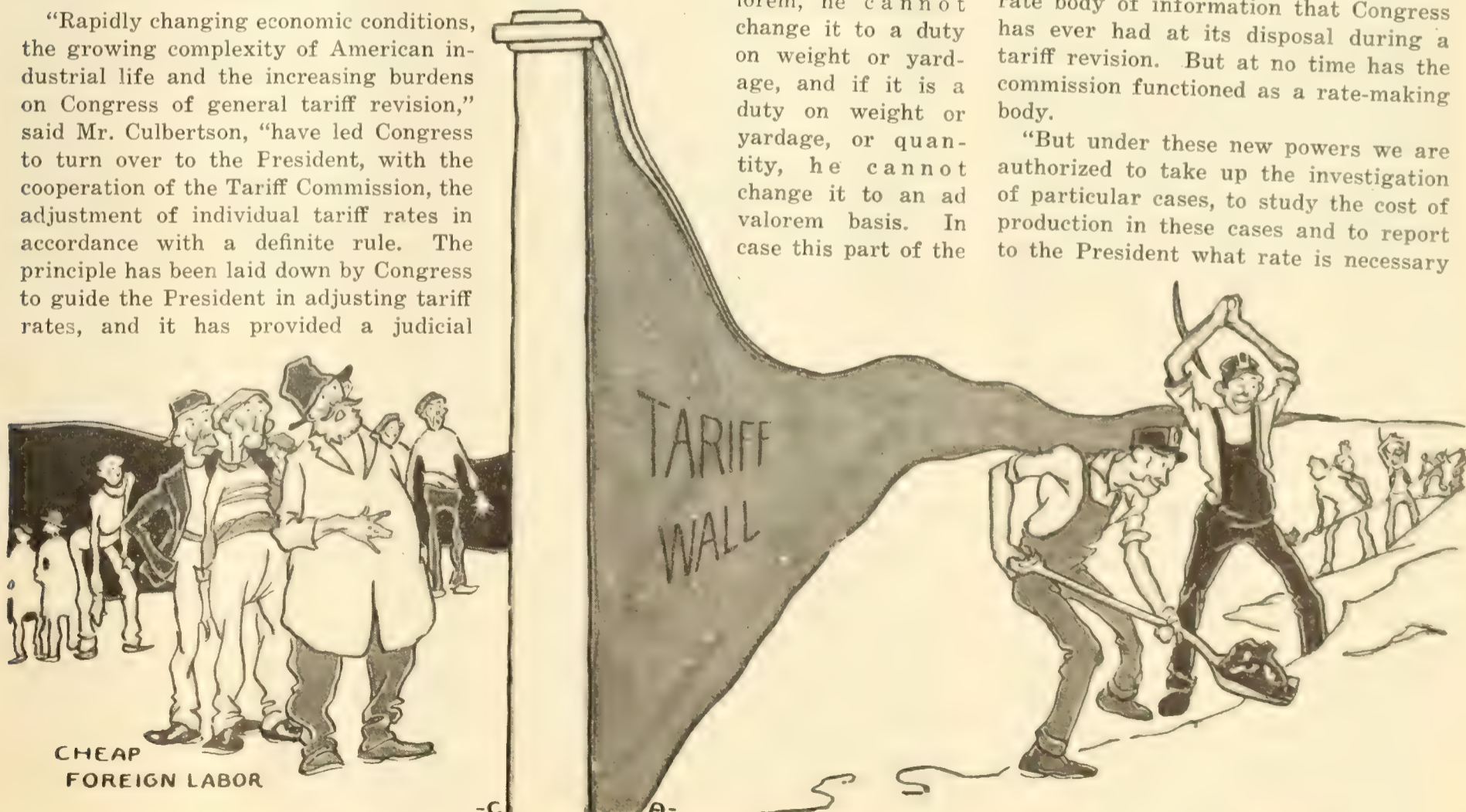
law fails, Mr. Culbertson said, the President is permitted to change the basis of valuation from the foreign to the American value, where adequate relief cannot be had by increasing or decreasing the rates provided in the bill.

"Uncertainty to business has been urged as one of the objections to this new power conferred upon the President," Mr. Culbertson continued, "but, on the contrary, it is more likely that these provisions will lead to greater stability. Nothing could be more disturbing to business than the long-drawn-out tariff controversy through which we have just passed. Business has been held in suspense. The new measure affords business men adequate opportunity to be heard and to have individual rates modified to meet changing conditions without the serious upheaval which always comes with a general tariff revision.

HAS TWO GENERAL FUNCTIONS

"The Tariff Commission, under these new powers, will really have two general functions. One function is the function of making general investigations, purely a fact-finding function. As a result of the work under similar power held by the old Taft Tariff Board, we placed in the hands of Congress, during the last tariff revision, I believe the most accurate body of information that Congress has ever had at its disposal during a tariff revision. But at no time has the commission functioned as a rate-making body.

"But under these new powers we are authorized to take up the investigation of particular cases, to study the cost of production in these cases and to report to the President what rate is necessary



to equalize the difference in cost of production in that particular industry in the United States, and in the principal competing countries. The power, as it is now granted to the Commission, is semi-judicial in character. The Commission, of course, has no discretion as to the rule or principle which it is to apply, but the finding of the facts, and the applying of the rule to these facts, is turned over to the Commission and becomes practically a power similar to that conferred upon a court."

Mr. Culbertson announced during his discussion that on October 7 President Harding had signed an order that all applications for relief under the flexible provision of the new tariff law were to be referred to the Tariff Commission. The order is as follows:

"It is ordered that all requests, applications or petitions for action or relief under the provisions of Sections 315, 316 and 317, Title III, of the Tariff Act approved September 21, 1922, shall be filed with or referred to the United States Tariff Commission for consideration and for such investigation as shall be in accordance with law and the public interest under rules and regulations to be prescribed by such Commission."

CASES MUST BE WELL BASED

It is obvious, Mr. Culbertson declared, that the mere filing of an application with the Tariff Commission for a change in tariff rates does not entitle a party to a formal proceeding. Only those cases will be taken up for action which present a prima facie case under the law, and which involve the public interest. The Commission, he said, will be at liberty to narrow or widen the scope of any case laid before it and will not be limited in its findings to the relief asked by the applicant. Its proceedings will be in the national interest. Hearings, at which statements will set forth the nature of the proceedings, will be of judicial character. They will be supplemented by field investigations both in the United States and in foreign countries.

The interest of the mining industry, as represented by the American Mining Congress, in the tariff is as an economic problem, and not as a political problem, Herbert Wilson Smith told the sessions. In his opinion, the question of a protective tariff has ceased more and more to be a political problem throughout the country. The position of the mining industry, he said, is that if the country was to operate under a system of protective tariff, it was the business of the industry to see to it that the basic industry of mining had its just consideration under such a tariff. If it isn't protected it comes in competition with a similar article produced abroad.

Much of the arguments in opposition to the tariffs proposed on many things were concentrated in the demand: "Let us get back to a pre-war level," Mr. Smith said, and continued: "I have not found yet any man in the United States who, himself, wants to go back to the pre-war level or who wants his industry to go back. He wants every one else to go back, but not himself. That applies equally to the owner of the mines, the manufacturer and the people who work in their shops. In attempting to obtain tariffs favorable to the mining industry, we had



William S. Culbertson

first the opposition of the producers themselves who would be benefited; producers who felt that the efforts for protection for certain mines were all hopeless. We started on this fundamental basis, however, of the principles which had not been declared official by any protective tariff policy party, but which had been somewhat generally accepted, that manufacturers should be protected." The removal of ores from the ground, in Mr. Smith's opinion, constituted a step toward manufacturing and the finished product in one step of

manufacturing becomes the raw material for the next process.

In answering opposition of ultra-conservationists, Mr. Smith related a parallel he said had been used. Assuming that at the time of the foundation of the Republic the wise men of the generation had with great wisdom set aside for conservation certain natural resources, which were to be released today, he said:

"The Secretary of War would turn over to the nation a reserve of chestnut forests in Virginia from which charcoal could be made for gunpowder; the Secretary of the Navy would turn over to the government a forest of pine trees in Maine from which it could be obtained better than any other place in the country, the masts for our ships, and a forest of oak trees in Virginia from which to build our ships, and we would have a deposit of low phosphorus iron from Pennsylvania to make muzzle loading rifles, and from Maryland would be given a deposit of flint for these rifles."

EFFECT ON FOREIGN TRADE

The effect of tariffs on our foreign trade with the debtor nations was commented upon by Mr. Smith. He referred to the statement often repeated to the effect that these countries must have free access to our markets in order to pay their debts. The argument, he said, is much like the appeal of one of two workmen, a debtor to the other, who had no job, but who suggested to the creditor, who held the single job in sight that he "lay off"; give the job to the debtor so he could earn enough to pay his debt.

DISCRIMINATION AGAINST MINING OUTLINED

FAILURE on the part of the federal government to recognize mining as a liquidating rather than a growing business and an inclination on the part of state and county governments to extract every possible cent of taxes out of the mining operations has started the industry on an inclined plane carrying it away from success and foretelling ruin in many cases. This was the picture drawn by Carmi A. Thompson, candidate for governor in Ohio, connected with mining since his boyhood days, in an address before the convention of the American Mining Congress.

Citing conditions in Minnesota, Mr. Thompson told of the situation confronting iron mines in the northern part of the state, which he declared paid practically every cent of taxes required to "run the most extravagant municipal township and county governments ever devised by man." One village, with a population approximating 12,000, was reported to possess more electric lights than the entire city of Cincinnati.

Mr. Thompson spoke in highly complementary terms of the method in which the Natural Resources Division of the Bureau of Internal Revenue is operating under its reorganization, stating that during the past eighteen months the mining industry of the country has had every consideration possible under the construction of the law as it stands. Fault with the federal taxation rests, he asserted, in failure of the statutes to appreciate the fact that mine operators in order to make profits not only must sell the product for more than the cost of mining, but must also pay the interest and general overhead, added to which is the most variable factor of all—an indefinite thing known as "liquidation" or the going out of business through depletion of ore stocks.

Correction of the negative situations confronting the mining industry can be achieved best by means of educative measures, Mr. Thompson declared, stressing in this connection the value of organized effort.

COAL'S PASSAGE THROUGH FIRE

By GEORGE H. CUSHING

IF COAL'S present labor troubles were confined solely to a defeat by the miners' union in one campaign, we would say that the operators had managed badly, and would dismiss the subject as a mere incident. We would all look forward to a reversal of positions at the end of the next encounter.

If the temporary regulation of coal by law were the result of a mere failure by Congress to understand the real issue in coal or of coal's failure to impress Congress, we would say that Congress had acted hastily and would dismiss the legislation as a mere incident. We would know that the order of things would soon be reversed.

Of, if both incidents were but the effect of a temporary disorganization of the coal industry, we could assume, with sound common sense, that the strong men in the industry would quickly recover their poise, marshal their forces, and reverse the present order of things speedily.

A MAJOR CRISIS

But, when we realize that, because of faulty construction and an insufficient foundation, coal's whole organization was falling to pieces at the very moment when a world movement in labor was reaching a climax, and when we know that, at the same time, a twenty-five year development in politics was reaching its peak, we must admit that we are confronted by a major crisis in the affairs of the people. That is, we are contending with nothing less than the fact that, in the crucial battle between labor and capital—in reality between socialism and capitalism—coal not only is on the battle front but it occupies the key position, and that it is demoralized and in a rout before its powerful enemies—unionism and politics in coalition. I mean that, as matters now stand, there is sufficient reason to support grave fears that the loss of coal's summer campaign may mean the prolonged supremacy of labor over all industry. There is even ground for the fear that this may cause such a sweeping change in the character of the world's greatest government as to give definite and prolonged success to the cause of Socialism and even of Bolshevism.

It may be true, of course, that the perils which I see are only inaccurate enlargements of a harmless miniature. Again, it may be true that my own anxiety—or a mere penchant for strong phrasing—leads me to paint vivid but

inaccurate pictures. I do not believe so because I but repeat what the best minds in America have expressed as the result of their own study. If, then, the picture is reasonably accurate, we are confronted by a situation which may well cause the business men of America to think long and well before they consent to pursue the present course much further.

SURVEY IS NECESSARY

To get even a fairly complete understanding of the present situation, we must make a hurried survey of the developments in labor, in coal, and in politics since the turn of the century.

When the Twentieth Century dawned, the old Knights of Labor had fallen because of the excesses of its leaders and the American Federation of Labor, better organized and more conservatively led, was rising steadily toward its present great power. The United Mine Workers of America had been organized; had passed through the early stages of poverty; had been able to assure its own future by winning the check off; and was ready to begin a campaign of steady expansion toward wealth and influence.

Its firm hold upon the central competitive field—western Pennsylvania, Ohio, Indiana and Illinois—had been secured by the signing of a contract which gave to its members a monopoly of the right to labor in the coal mines of those major producing districts. Temporarily, there was no need to fear that this arrangement would be disturbed by any act of the operators. The mines of these four states were in an intensive competitive struggle for the mastery of common market. The operators knew that, without some such governing factor as a common or comparable labor cost of coal production, their competitive struggles might easily involve the entire industry in ruin. For their own protection, therefore, the operators could be depended upon to leave the union undisturbed in its monopoly of the right to labor, so long as labor costs were relatively the same in all fields.

LABOR DISGUISED MOVEMENT

The union—always suspicious—had not believed that this relationship could endure to safeguard its own future; it had, by disguising its movement as a measure to protect the lives of the workers and the property of the operators, put through the legislatures of these

four states the law which demands that every practical miner must have a certificate and which lodged the issuance of such certificates in the hands of union members. These laws, the effect of which were not recognized for years after their passage, perpetuated the miners' union's monopoly, even as the check-off had financed it.

When the union had been thus securely established, it began an aggressive campaign of expansion. It first established the point that the right to any check-off at all was a right to an unlimited check-off. It thus could compel the operators to pay into the union's treasury such amounts as the members of the union would consent to without rebellion. When it had thus assured to itself what virtually was an unlimited war chest, the union began its campaign of expansion by its attempt to supplant the old Western Federation of Labor in the coal mines of Colorado and by its attempt to extend its dominion south of the Ohio and Potomac rivers.

Securely entrenched in its own field and needing only time to realize its ambition for a complete monopoly of coal mine labor on the North American continent, the miners' union next began to expand in other directions. Without going elaborately into the details, it sought and established friendly relations with the various unions among the employes of the water and rail transportation companies. Last spring, the miners' union reached the highest point of its power when it made an offensive and defensive alliance with a majority of the fourteen unions among the railroad workers and when, on July 1, it was able to bring about a concurrent strike of the coal miners and shop craft unions.

A NEW CAMPAIGN

Holding a secure position in the American Federation of Labor, and having won a permanent ally in the shop craft unions, the miners' union, recently, has moved for an alliance between the coal and transport workers of Great Britain and America to the end that neither shall in future supply coal to help break the strike of the other.

And, all the while, the vaulting ambitions of the labor leaders have looked far beyond the petit struggles for supremacy at home to The World Labor Office under the League of Nations. Through that device, they hope to bring about the concurrent enactment in all

nations of those social laws which are highly favorable to labor.

While these struggles were in progress to establish the strength of the union, another movement of supreme importance had been under way. The strike of the anthracite miners in 1902 had proved more protracted than anyone believed possible. As a result, the householders were likely to be deprived of their supply of familiar coal. John Mitchell was head of the miners' union. Theodore Roosevelt was President of the United States. To compose the differences between the miners and the operators, President Roosevelt appointed the Anthracite Strike Commission. Labor construed this act to be an invitation to carry their grievances against capital, in future, to the federal government for adjustment.

GOVERNMENT AGENCIES CREATED

As a result of the importunities of labor, there followed quickly the creation of the Bureau of Mediation and Conciliation in the Department of Commerce and Labor. This was followed, in remarkably short order, by the creation of the present Department of Labor. And, it is highly significant that the first Secretary of Labor was William B. Wilson, who had, for years, been the secretary-treasurer of the United Mine Workers of America.

Thus, as this brief history shows, it was no mean organization with which the operators came to grips on the first of last April when the miners demanded an indefinite continuance of the war wage scale and when the operators—fighting the outpost battle of all business—demanded the beginning of deflation of labor costs as a concession to post-war conditions. The difficulties of the operators were increased immeasurably by a movement in strategy on the part of the miners which the operators had wholly failed to see and the advantage of which they had wholly neglected to measure.

In the bituminous field, the miners had for years contrived to establish the practice that the wage adjustment in the central competitive field was accepted as the basis for adjustment of wages in all of the "outlying" districts. Thus, after twenty years, it had come to be considered most natural and logical that the central competitive field should make the basing rate and that the "outlying" districts should use that scale as the foundation of their own scales and contracts. It was overlooked, generally, that this established both the principle and the fact of nationwide agreements.

UNION'S STRENGTH REALIZED

As early as 1919, a few of us saw that the miners' union was finally get-

ting ready to establish, by a supreme test, its supremacy over the coal fields. We saw that it intended to bring concurrently against the operators' pressure of union strength from all parts of the coal fields; of the full strength of other and affiliated unions; and of its friendly ally, the national political forces. Up to that time, on scattered occasions, the agreements in the anthracite and bituminous fields had expired simultaneously. However, either because its hold on the anthracite field was not secure, or because its strength in other directions was not sufficient, the miners' union had never risked everything on a truly nation-wide strike. Late in October, 1919, the miners' union began to show signs that the time for the great showdown was approaching. It made, quickly, an adjustment with the anthracite operators. It won handily a victory over the bituminous operators. When this skirmish was out of the way, it became apparent that the anthracite and the bituminous contracts would expire simultaneously on the first of April, 1922. Some of us believed that at the expiration of those two strikes, the miners' union would be ready for the supreme test of strength for which it had been preparing for over twenty years. Therefore, when the actual test came, none of us was much surprised; matters had been moving swiftly in that direction for a long time.

In the meanwhile, the political drift in this country had been equally pronounced. It had been away from our established theories of government and toward new and strange doctrines. That, however, is a matter with which we are all perfectly familiar. So a much briefer statement will suffice. As we turned into the twentieth century, we had voted down sternly and successively the impassioned appeals for cheap money and for government ownership of the railroads. For the second time, we had ensconced Mr. McKinley snugly in his office on a technical tariff plea for the protection of our industries and on the smug slogan of a "full dinner pail." Then the bullet of an assassin removed Mr. McKinley from the political arena, and, under Mr. Roosevelt, we set about the task of giving to American business a conscience.

In that major operation—and it was nothing less—we passed through the muckraking period which gave tone to our publications and our politics for a generation. In the furious passions of those times we made amazing changes in things which had been of vital importance to our growth and development.

Specifically, we tore down the organization which was trying to build our railroads into an effective unit. We set

up in its place an independent governmental commission which, recruited from the ranks of practical politics and wholly inexperienced, set out to govern carriers according to theories which were wholly new.

We tore down that great but intangible power which was commonly known as "Wall Street." We set up in its place a dictatorship over the nation's finances by creating the Federal Reserve Board.

We tore down the political party organizations. We set up in their stead the preferential primary and the direct election of Senators.

A SWEEPING TRANSFORMATION

In the first twenty years of this century, the so-called public opinion became so strong against the old ideas and so favorable to experiments that its influence was felt even by the Supreme Court, which proceeded to abdicate what had once been its position. This sweeping action transformed this country at one stroke from a republic with a judicial head to a pure democracy with a newspaper head. In obedience to the same sentiment, the Congress—forced by the abdication of the Supreme Court to rely solely upon its own wisdom and doubting that it would prove possible to coin wisdom in such an unwieldy body—also proceeded to abdicate by transferring its power, authority, and discretion to a constantly increasing number of separate and independent commissions.

These things are, of course, mere incidents of the movement. As such, they are known to every student. They are interesting as incidents, but they are by no means so important as the result. The most notable and important effect was to decrease steadily the power and influence of the political party and to set up, instead, the power of that intangible thing known broadly as public opinion. The immediate result was that our public men thought increasingly less of squaring their conduct with the wishes of their party and increasingly more of saying and doing those things which would appeal to the home newspapers which, in turn, were appealing more and more to the passions and less and less to the reason of the mob.

THE TWO GREAT CLASSES

Since we are dealing with forces rather than with personalities, one tendency can, without disparity, be mentioned. Those who have spent much time in Washington are aware that its conglomerate society always contains a certain definite percentage of men who think along conservative lines and another percentage of those who have radical tendencies. The normal percentage of each group to the whole has, per-

haps, not changed in any marked degree in so short a time as a generation. But the supremacy of the conservative group has definitely broken down. This great change has taken place as the result of a classification which Mr. Roosevelt established when working at the height of his zeal and which persists with destructive effect. With sweeping scorn, Mr. Roosevelt referred to men of conservative thought as "standpatters." With characteristic impulse, he described the others as "progressives." Subsequently, when any public question has been under consideration, a mere cautious utterance expressing doubt as to the effectiveness of a proposed innovation has been sufficient to cause a public man to be listed as a "standpatter" with destructive results to his popularity. On the contrary, the announcement of the wildest schemes has frequently caused members of the other group to be crowned with the halo of being a "progressive." The effect has been to quiet the conservatives and to increase the power and volubility of the radicals.

It was before this awful political tribunal that the coal industry had to appear to plead its cause when the strike had been protracted to the point where its struggle with the labor monopoly had ceased to be "a private quarrel" because the shortage of coal had threatened the new found and hallowed "public interest." It is not surprising that the operators, sure of failing to find sympathy, decided to stay at home.

The third party to the interesting triangle was, of course, the coal operator. We cannot understand the situation fully without coming to an appreciation of his position also.

As we turned from the old to the new century, a general movement was in progress to consolidate the small and badly-managed units of business into large corporations which were well managed.

MATCHED BY ANOTHER TENDENCY

This was matched exactly by a well-defined tendency toward integrated industries—a tendency to combine in one organization the raw material and all processes of its manufacture.

In all of this upheaval in business generally, coal had no considerable part. A consolidation was tried here and there. But it was soon found that such things were doomed to failure because good money was paid for bad and old mines and it was used by those who received it to open new and better mines in competition with the combinations. So, organized finance was discouraged.

Also, it was realized that the only possible manufacturing process in coal is its distillation in by-product plants.

The by-product industry did not care to assume the burdens of bituminous coal's demoralization. And, bituminous coal lacked the funds or the financial backing to go into the by-product business. So, deserted by organized capital on the one side and by the processing interests on the other, coal had to remain a mere quarrying business split up into small and warring units and districts.

CONSERVATION CAMPAIGN OPENED

At about the same time, under the spur of truly national forces, we began an intensive campaign for the conservation of our natural resources. One of its most effective expressions was the improvement of combustion processes to get, to the machine driven, more of the power content of the coal. This resulted in such a sweeping improvement in furnace equipment and combustion methods that everybody's coal was good in any market. This substituting of new coals for old uses went to such extreme lengths that Illinois coal, which was not supposed to be a coking coal at all, was used successfully for both the making of by-product coke and of artificial gas. This great change in combustion methods gradually destroyed old measures of coal value.

At the same time, the buying units were gradually increasing in size, as the combinations in industry occurred. In addition, the association movement spread to and included the purchasing agents. As a result of these two movements the buyers of coal brought effective, because united, power to bear to force the prices of coal down.

Thus the operators were prevented from consolidating by the lack of financial support; by the unrestricted amount of coal land available for development; and, by the natural hostility of the people toward anything approaching a monopoly of their fuel supply. They had to meet a constantly increasing tendency toward centralized buying on the part of their customers. And, they had to face the breakdown of their hold upon certain markets because of a change in furnace equipment and combustion methods. These various things resulted in a strength of competition which brought absolute anarchy into the coal fields. This anarchy grew as the strength of competition increased until we entered the war in 1917. The measure of it is this: At one time, we had as many as 150 separate and distinct producing districts. Each district was an Ishmaelite with its hand raised against all other fields. And each operator in each district had raised his hand against each unit in his own field. A more intensively individualistic business has never been seen in this or any other country. In that position, we went into the preliminaries to the World War.

There followed, upon the declaration of war, the attempt at community action and hence the attempt to pull these warring factions into single organization. But, the attempt was made without removing a single cause of the intense discord. In such organizations as the National Coal Association, coal men were held together by the impulse of patriotism rather than by the dictates of either reason or self-interest. It was wholly an artificial organization resting upon purely a sentimental base.

When the war was over and when competition returned with its old fury, plus that momentum which had been added to everything by the war, the coal operators began to lose their war-made money and with it the loftier sentiments which had come to them on the flood of the war hysteria. Naturally, the associations which rested on solely a sentimental base began to crumble when the sentimental foundation was ripped from under them.

It was at the exact minute when the operators were about to return to their guerrilla warfare among themselves that the United Mine Workers chose to make its attack upon the industry with that powerful well-knit organization which I have described. And, it was at that particular minute that, for the reasons given, the political organization of the nation had reached the zenith of softness which always spells the beginning of decay.

REASON FOR UNION VICTORY

With that much in the background, it is perfectly easy to understand why the miners' union won its fight with the operators. It struck with the united force not only of its own powerful union, but of the federated unions of America. It struck at an industry the solidity of which was a mere shadow. But, while the overwhelming defeat of the coal industry is thus explained, we fail, even now, to get the significance of it all.

Labor was not thus uniting to destroy an industry which already was destroying itself. The labor movement was not in coal alone. Labor's ambitions do not run toward the mastery of coal alone. They extend to the conquest of business as a whole, including the subjugation, even, of governments. This is all made clear by the thinly disguised image of the World Labor Office under the League of Nations which every union leader steadfastly holds before his eyes.

Nor does the weakness of modern politics express itself solely in its relations with coal. That weakness was most pronounced in coal merely because coal happens to come a little nearer than anything else to that sacred "public interest" of which we hear so much.

The essence of it all is that our public men are living in deadly fear of that awful classification—the standpatter versus

the progressive. And, without a party behind them, the individual politician is standing in awe of that powerful confederacy of labor unions which is bearing down upon government and trying to persuade it to seize industries and turn them over to labor.

DRIVE AGAINST INDUSTRY

Thus we return to the point from which I started. This drive by united labor against coal was not against coal but against industry in general. This weakness of political action was not strength against an offending coal trade but softness in the face of the demands of united labor.

And, this is not a situation which concerns coal alone. Coal, on the contrary, merely is trying to hold the key position in the front line trenches until the remainder of the forces of good government and good business can be organized to resist the unholy alliance of labor monopoly and socialistic politics.

When the nation is confronted by such a situation as has been described and when it is known that an unlimited projection of present tendencies must in the end overturn both our theory and form of government, two alternative courses suggest themselves—they spring unbidden into even the average mind.

THE TWO ALTERNATIVES

One of them is to reduce the federations of labor to subservience to law; to break up the unholy alliance between strong labor and weak politics; and to infuse a little stiffening into the spines of timidly inclined public men.

The other is to build up a federation of business which will be of sufficient size to cope with the federated forces of labor; to rest this federation on the aroused and enlightened opinion of the middle classes; and to begin that sustained resistance which will, in the end, return the ambitions of the labor and political groups to rational channels.

Naturally, results can be expected from the choice of either course only after prolonged, great and patient effort. But, of the two, the second method seems to promise the quicker and the more sound solution.

A condition precedent to the adoption of either course must be:

1. Recognition by the coal industry that continuance, further, of its disorganized state is dangerous alike to itself and the public interest.

2. Recognition by the coal industry that continuance, further, of its policy of isolation as respects effective or organized groups in other industries, is dangerous and harmful to all.

3. Willingness on the part of the coal industry to accept, in the right spirit, the extension of friendly overtures on the part of organizations in other industries.

4. Willingness on the part of members

of the coal industry to overlook the unavoidable and inconsequential imperfections of its own selected leaders; to enter conferences called to determine national policy stripped of all those prejudices which arise from the struggle for supremacy in common markets; and, to subordinate personal opinions or ideal to

those necessary modifications of action which must come in mass movements.

Thus, whichever of the two courses is ultimately decided upon, the first preliminary step on the part of the coal industry is a reform of its own point of view and the reestablishment of its organization lines.

TWO THOUSAND LIVES SAVED YEARLY

Work of Bureau of Mines, Result of Mining Congress Campaign, Cuts Underground Hazards in Half, James F. Callbreath Reports Safety Work Forms Common Plane

IMPRESSIVE FIGURES relating to the saving of miners' lives accomplished by the American Mining Congress as a result of its successful campaign instituted many years ago, which resulted in creation of the Bureau of Mines within the government's administration, were presented by James F. Callbreath, secretary of the Congress, in addressing its twenty-fifth annual convention.

"If the loss of life per man as compared to the number of tons of coal mined had maintained the same ratio in 1920 as in 1907, when the 'safety first' campaign was inaugurated," he stated, "the number of fatalities would have reached 4,463 annually, but the actual loss was 2,271, a saving of 2,192 lives each year."

Touching upon the subject of taxation of the mining industry by the federal and state governments, Mr. Callbreath showed in his report to the Congress that investments in the mining industry have increased from \$19,000,000 in 1907, to \$361,000,000 in 1919. The value of mining products in 1907 was \$236,000,000, while in 1919 it was \$624,000,000. These figures show that the mining industry has borne an increase in taxation during the ten year period of 6,230.5 percent.

"The mining industry must not expect relief from continued high taxes for many years to come, Mr. Callbreath declared, because a total of 58 percent of federal taxes are fixed to cover war expenses already incurred, and 27 percent to provide for current expenditures for the War and Navy Departments and for construction of good roads. Efforts of the Mining Congress to solve the taxation problem therefore will be mainly in the field of state taxation. The greatest step in the direction of reducing the taxes to be levied upon the industry will have to be taken in efforts to reduce governmental expenditures, which at present are financed by the 15 percent of income represented by the margin shown over the above expenditures.

The mining industry is more than willing to bear its just share of the na-

tion's financial burden, but the American Mining Congress is determined to exercise a constant vigilance to prevent any advantage being taken of it in these matters."

STATISTICS ON MINE ACCIDENTS IN 1921

ACCIDENTS in all branches of the mineral industry in the United States, including coal mines, metal mines, quarries, coke ovens and metallurgical plants (except iron blast furnaces) resulted in the death of 2,367 men in 1921, according to the Bureau of Mines, as compared to 2,984 in 1920. For all mines except coal, the number of employes injured was 35,416, as against 56,057 in 1920.

While these figures indicate a reduction in fatal and non-fatal accidents, there was an increase in the number of accidents per thousand men employed. The fatality rate for all workings combined was 3.59 per thousand employes (on a standard basis of 300 working days per year), as against 3.29 the year before, while the injury rate for all plants (except coal mines) was 192.69 per thousand employes, as compared with 184.12 in 1920.

The increase in accident rates per thousand men employed may be largely attributed to the part-time operation which prevailed in the mining industry in 1921, since periods of idleness or intermittent work are generally followed by an increase in accidents.

The total shifts worked by all employes was 197,560,952, a loss of about 27 percent from the preceding year. Each employe averaged 189 working days, as compared with 249 in 1920. Coal-mine employes averaged 173 days, a loss of 57 days per man, as compared with 1920; employes at iron mines worked 210 days, a loss of 85 days each; copper-mine employes averaged 244 days, a loss of 73 days each; employes at stone quarries averaged 233 days, a loss of 34 days per man.

THE ASSAULT UPON TAX PROBLEMS

Lances of Tax Experts at Cleveland Conference Directed Against Quandaries Created By Complex Provisions of Law—Administration Costs Mount High—Expenditures By Government Must Be Curbed

COMPLEX PROVISIONS of the federal revenue laws provided the principal subjects of discussion at the conference on mine taxation held at Cleveland, Ohio, October 9-11, in conjunction with the 25th annual convention of the American Mining Congress. Mining companies who have met with difficulties in the adjustment of tax liability under the excess profits tax law will find in the proceedings of this conference the solution of many of their problems. The clarification of regulations and the application of principles outlined by the group of experts assembled at the conference should save the mining industry millions of dollars of the present cost of adjusting tax returns and should prevent delays in settlement in many instances. The results will be beneficial not merely to taxpayers but also to the Bureau of Internal Revenue which has been confronted with numerous administrative difficulties due to the lack of a proper understanding of the requirements of the law on the part of taxpayers.

HUGE ADMINISTRATION COST

The bureau holds in Washington each year approximately 35,000 conferences with taxpayers, 9,000 or 10,000 of which involve mining companies. The total cost of these conferences to taxpayers, exclusive of taxes paid, approximates \$85,000,000, \$23,000,000 of which is paid by the mining industry. The total cost of making income, excess profits, and capital stock tax returns by all classes under the federal revenue laws, and the adjustment of these returns, is not less than \$150,000,000. This sum, added to the annual appropriation by Congress for the internal-revenue service, brings the cost of administering the federal tax laws to a total of more than \$200,000,000 annually. These estimates do not take

into consideration the loss occasioned by delays in settlement of tax cases which tie up indefinitely large reserves of capital which otherwise would be released for building, development, exploration, expansion and improvement in the various industries affected; neither do they reflect, even in a small measure, the time expended and the worry and uncertainty experienced by executives, directors, stockholders and investors pending the determination of controversial questions.

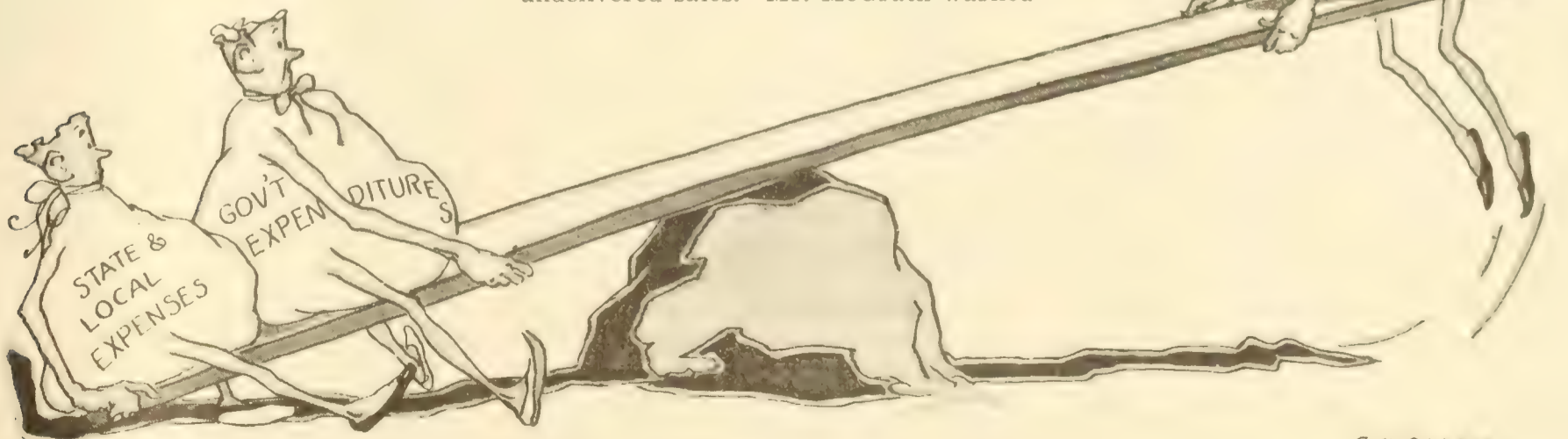
The purpose of the conference was to bring about a clearer understanding of these questions, decrease the expense of effecting adjustments, remove some of the uncertainties involved, secure closer cooperation with the Bureau of Internal Revenue, and establish, if possible, certain principles in the interpretation of the laws which would minimize litigation in the courts. To this end the speakers at the meeting devoted months of careful study in the preparation of their themes, consulting every possible source of information which might throw light upon any phase of the situation, and it is believed, therefore, that the discussions will form an epoch in the history of mine taxation. This view was expressed by many of the delegates, including representatives of the Bureau of Internal Revenue who were present, and who participated in the meeting.

STUDY OF MINE ACCOUNTING

The matter of mine accounting methods is very important, not only from the standpoint of federal taxation but also for state and local purposes. This subject was ably presented by T. O. McGrath, author of "Mine Accounting and Cost Principles," who gave special consideration to earned surplus as of March 1, 1913; depreciation, repairs, and replacements; inventories and costs; and undelivered sales. Mr. McGrath warned

mining enterprises of the possible reinstatement of the excess profits tax and advised all companies to show upon their books in the future as near as may be possible the full value of their mine properties and their invested capital. He pointed out that the regulations of the Treasury Department are gradually crystallizing into a fixed system that must be met by all business enterprises regardless of trade practices or customs, and suggested that each trade or business should first agree among themselves as to what is standard practice, and should then present their findings to the department.

One of the most serious problems of mining companies, and one of the least understood because of its novel character, is that of distributions from the depletion reserve under the federal tax laws. The careful analysis of this subject by Paul Armitage of the United Verde Extension Mining Company, chairman of the standing tax committee of the American Mining Congress, should prove to be of great value to every branch of the mining industry. Mr. Armitage outlined the conditions and limitations, together with the formalities which must be observed, under which such distributions may be accomplished in accordance with both state and federal laws, whether from a depletion based on a March 1, 1913, valuation, a depletion based on cost, or a depletion based on discovery value. He also discussed the effect of a distribution



C. C. ALLEN.

from depletion reserve on the taxable status of the corporation, and the effect on the taxable status of the stockholder who receives such a distribution.

DISCUSSION OF DEPLETION

As any discussion of the question of depletion distributions would be incomplete without recommendations concerning the setting up in corporation books of definite accounts which will show the status of the depletion, earnings and dividends from the standpoint of the federal revenue laws, H. B. Fernald, of New York, proposed several bases for handling these accounts on the books, giving illustrations which should enable the bookkeeping department of any mining corporation to decide upon the particular basis best suited to the peculiar circumstances or conditions of its business. Mr. Fernald declared that since the passage of the present law defining "dividends" and fixing the taxable status of distributions received by stockholders, a corporation, to do justice to itself and to its stockholders, is almost under the necessity of keeping in its books some very definite accounts which will satisfy the requirements of the Treasury Department, whatever they may be ultimately, with respect to the items mentioned. He further disapproved the use of the term "depletion reserve" on account of the confusion caused by its use, and recommended that the accounts be given designations which more clearly reflect their exact nature.

INVESTED CAPITAL DISCUSSED

Taking up the question of invested capital of mining corporations, George E. Holmes, author of "Holmes' Federal Taxes," and vice-chairman of the standing tax committee of the American Mining Congress, reviewed this subject broadly in all its ramifications. He stated that actual facts, and not bookkeeping entries, determine invested capital; that the capital, surplus or deficit, reserves, and other items on the balance sheet are material only if they reflect the true facts; and that neither the government nor the taxpayer is bound by such entries. He declared that if they are incorrect they may be explained and the corrected figures substituted, and asserted that allowance must be made for imperfections in the record and that the taxpayer can neither gain nor lose thereby. After discussing comprehensively the provisions of the law and regulations relating to cash paid in, tangible property paid in, intangible property, paid-in surplus, earned surplus and undivided profits, depreciation and depletion reserves, dividends, and changes during the taxable year, he stated that the problem of ascertaining invested capital is fundamentally a technical proposition solved according to rules.

Logically following and closely interwoven with the subject of invested capital is the subject of special cases arising under Sections 210 of the revenue act of 1917 and 327 and 328 of the revenue acts of 1918 and 1921. This matter was thoroughly discussed by R. N. Miller, formerly solicitor of internal revenue, now serving as a member of the American Mining Congress standing tax committee. Mr. Miller pointed out that the government has rules by which taxable net income is computed, technical invested capital is calculated, and definite tax liability is determined; but when it was discovered that the statute lacked flexibility and resulted in exceptional cases of hardship and injustice, because the formulae did not fit particular cases, provision was made by which special appeal might be made for the computation of the tax without reference to the strict definition of invested capital, and thereby in these special cases taxation is softened by being based on what other taxpayers engaged in similar businesses pay. He then outlined the rules and formulae to be observed in handling cases coming within these provisions of the law, and expressed the view that there are many companies entitled to special relief who have not asserted their claims because of uncertainty as to the manner in which the government would treat such claims.

The question of valuations for purposes of federal income taxation was discussed by R. V. Norris, mining engineer, also a member of the standing tax committee. Mr. Norris carefully analyzed the limitations of the bases of valuations upon which federal taxation of mines is imposed. He stated that if a mining property has been recently purchased as a going concern, developed and equipped, the cost is the best evidence of value, but that in general such is not the case; that actual sales of similar properties are influenced by conditions leading to wide variations in price; that market value of stocks or shares very imperfectly reflects the earning capacity of a property, and not its sale value; that local assessed values depend much upon local laws, regulated more or less by local customs, and therefore have little bearing on actual worth; that accountings, records of litigation and probate court inventories sometimes are helpful in fixing values for the actual lands involved, but are of little general value. Speaking of analytical valuations, he said that the value of a mining property is universally acknowledged by mining and accounting authorities and by economists to be the present value of its future earnings, and discussed the

various factors to be considered in such valuations.

AN UNCERTAINTY EXISTS

Because of the uncertainty existing in the minds of taxpayers as to when a tax case is finally closed, the subject of settlements and compromises with the Commissioner of Internal Revenue was discussed briefly by M. W. Kriegh, chief of the Tax Division of the American Mining Congress. Asserting that a taxpayer at the present time has no positive assurance that his case is closed unless he has signed a written agreement with the commissioner or has effected a compromise, or unless action by the government is barred by the statute of limitations, Mr. Kriegh called attention to a new provision which appears in the 1921 revenue law, section 1313, which he believed was intended to protect taxpayers against any review of their cases which may be initiated by the government after final settlement, except under two specific contingencies mentioned in this section—"fraud or mistake in mathematical calculation"—even though an agreement has not been signed as provided for in section 1312 of the 1921 act. Mr. Kriegh outlined the procedure of the bureau in arriving at a final decision, and mentioned the fact that under present rules the only instance in which a claim in abatement will be entertained is where an assessment has been made without giving the taxpayer an opportunity to appeal or without awaiting a decision on an appeal that has been perfected.

STATE TAXATION QUESTIONS

The general question of mine taxation by the states was presented to the conference in an illuminating address by W. R. Ingalls, mining engineer, in which problems of state taxation were analyzed in a most convincing and logical manner. Pointing out that the acme of difficulty is experienced in the valuation of mines, which, in commercial affairs commonly requires a high order of experience and skill on the part of professional engineers, he said that the inability of a local board of assessors, or even a state commission of equalization and review, to cope with such a problem is obvious; that it is almost beyond the bounds of reason to expect a town, county, or state assessor to grapple successfully with a problem of mine valuation, or even to grapple at all, and that when the state law requires him to do so it demands for him the impossible. In such states, therefore, Mr. Ingalls believes that assessors should listen attentively and respectfully to the mining company when it offers its own valuation through engineers of experience and standing. He further expressed the opinion that the mining industry may usefully engage in the for-

mulation of certain fundamental rules for the guidance of assessors who are not versed in the mining industry. Mr. Ingalls explained how he had inventoried the national wealth of the United States at the end of 1920 at 273 billion dollars, out of which the mines were estimated at 3¼ billion dollars, showing that the value of all the mines and metallurgical works is but a trifling percentage of the value of the aggregated national wealth, although the mining industry is of major importance, giving to the railroads more than 50 percent of their total tonnage and paying to the states and nation a large and ever-increasing percentage of the tax burden. Mr. Ingalls stated that although complete data which would reveal the truth is not available, it is highly probable that in general mines are overtaxed by the states, counties and towns, they being more or less of the nature of easy marks for the tax gatherers.

SPECIAL COMMITTEE REPORTS

The special committee on state taxation of mines reported that the question of mine taxation is wholly dependent upon the system of general taxation and finance in each of the states, and that therefore it seems impossible to make any recommendations looking toward a uniform system of mine taxation applicable to all states, without, at the same time making recommendations for a standard system of general taxation and finance, of which mine taxation is a part. Acting upon the report of this committee, the conference passed a resolution accepting the recommendations of the committee and resolving further that the subject of improvements in methods of local taxation of mines be referred to the local tax committees of the several chapters of the American Mining Congress who may, if desired, confer with and secure the aid of the standing tax committee of the national organization. A resolution also was passed demanding the elimination of all expenditures of national, state and local governments not vitally necessary for the proper and efficient conduct of such governments and the authorization of such expenditures only as are necessary to the minimum called for by sound common sense and business principles. This resolution further calls upon the citizens of the country, whether or not members of the American Mining Congress, to give definite thought and serious consideration to the means by which unwise, extravagant or unnecessary public expenditures can be restrained.

C. E. Jarvis, member of the state board of control of California, discussed the system of taxation in that state, stating that large economies had already been effected through the operation of a budget system adopted recently.

Albert H. Fay, chief of the Natural Resources Division, Bureau of Internal Revenue, brought to the conference charts showing the progress of the work of auditing returns and checking valuations in his division, and in his remarks illustrated convincingly the difficulties encountered in dealing with industries so varied as those of natural resources, emphasizing the need for close cooperation with the bureau in developing the facts upon which tax determinations are based.

E. H. Batson, deputy commissioner of internal revenue, told the delegates that wartime cases are being rapidly disposed of, notwithstanding the stupendous task which confronted the department in securing and retaining a trained organization, and expressed, on behalf of the department, appreciation for the constructive cooperation of the American Mining Congress, which, he said, had done many things for the department which had aided materially in expediting settlements.

PATERNALISM IS ON ROAD TO COMMUNISM

Dangers Held by Present Tendency Are Pointed Out by Judge Ira E. Robinson, In Address Before Convention—No Province for Interference With Private Business

THE GOVERNMENT must execute a "right-about face" and move away from instead of toward paternalistic tendencies if complications that will eat into the industrial and economic strength of the country are to be avoided. This broadly was the strain in which Judge Ira E. Robinson, war minerals relief commissioner and former chief justice of the Supreme Court of West Virginia, addressed several hundred mining men and their guests at the annual banquet of the American Mining Congress in Cleveland, October 13.

Styling himself as "a very earnest and thoughtful and, at the present time, pessimistic American citizen," Judge Robinson devoted his address to a portrayal of the trend which political and legislative activities are taking in their connection with the relationship between "The Government and the Individual," which formed the topic of his discussion.

Judge Robinson drew upon legislative history of comparatively recent date to show that this trend is being followed, declaring that each additional step taken in this connection. "This burden," he just that much closer to communism. He cited the increasing burden of taxation in this connection. "This burden," he declared "goes so far now that if it is continued it will bring about virtually a dissolution of the private right to property, and that dissolution is merely tending toward communism and socialism and the sharing of property and forfeiting of individual right."

"We see in Congress," he continued, "a number of bills which show the present paternalistic trend. The maternity bill very clearly shows this trend—taxing the American people for something which is a mere propaganda or which is in the interests of the community and not of the individual."

"And so we go on with taxation, burdening our people for paternalism, encroaching upon their earnings, discouraging them in their ambition for individual up-building and acquirement, and striking at their ambition to remain and acquire and to be strong loyal Americans.

"I have been admonished by some of my friends: 'You speak so pessimistically of this great country today.' I don't say that the government is yet interfering with individual rights, but I can see how it is discouraging men in individual activity. We know how a contagious disease spreads, and I hope that we as American citizens may guard against that in this.

"Government rightly understood has no province of interference with private individual business activity. The founders understood this, and builded accordingly. They had had enough of governmental domination of individuals and they sought clearly to protect every individual right to private property and activity against encroachment of every other individual and most particularly against encroachment of the great government itself.

"A government is only strong by strength of its individual citizens. No man can be strong when his opportunity for development is curbed.

"Government paternalism is nothing short of socialism. It not only weakens the people by denying them opportunity for individual achievement but burdens them with taxation in behalf of others to whom they owe no duty, which taxation in time by its encroachment dissolves their individual right to property. We are paying taxes for too many ideals and thereby fostering the doctrine of the community right over private right."

Judge Robinson was for eight years on the Supreme Bench of West Virginia and for two years its chief justice. He now is special representative of the Department of the Interior.

SAYS "LABOR OLIGARCHY" CONTROLS NATION'S COAL

J. G. Bradley Tells Convention Delegates of Coal Operations in Southern Fields—Calls for Action to Stave Off Strike and Regulations

PREPAREDNESS and an ability among coal operators to adapt themselves to changing economic conditions, and to properly deal with



J. G. Bradley

their employes as operators in union fields cannot do, enabled the southern coal fields to produce 80 percent of maximum during the period of depression in 1921, according to J. G. Bradley, who addressed the general sessions of the

American Mining Congress Convention in October. Of the total annual production of coal in the United States—340,000,000 tons in the central field; 160,000,000 tons in the southern field; 40,000,000 tons in the western districts and 25,000,000 in the Mississippi Valley—only the tonnage from the Southern field was brought to the surface free from the influences of the United Mine Workers of America Mr. Bradley said, and to this freedom from domination he ascribed the ability of the southern operators to produce.

"I want to show you rather an interesting thing," he said, "that this southern district, with its normal production of 40 percent of the total, during the six months which we have just passed, bade fair to swelling its production to take care of the entire needs of the country. With the strike which began on April 1, and the cessation of production in the north and west and the continued production in the south and the gradual movement of miners to that region, and the increase in the facilities of transportation, we saw that southern tonnage come up, week by week, from 3,500,000 tons to 4,000,000 and from 4,500,000 to 5,000,000 practically in the thirteenth week of the strike reaching the 6,000,000 point. If it had not been for the disaster of the shopmen's strike by the third week in September, at the rate the southern tonnage was increasing, it would have been producing 8,000,000 tons of coal and would have taken care of 100 percent of the country's demands."

This increase in tonnage was ascribed

by Mr. Bradley to the method of the operators in handling their men, which method was successful in both the 1921 period of depression and in the period covered by the strike this year, which forced the closing of mines in unionized districts. Mr. Bradley referred to the method rather as the ability of the operators to adapt themselves to changing economic conditions.

Mr. Bradley indicated by his emphasis that the third parties who attempted to enter the southern field were not well received and that the lack of a favorable reception has prevented the growth of "pests, diseases and assailants" among those who actually man the mines.

Instances of lawlessness in states within the southern field were related by Mr. Bradley who told of the strenuous efforts to bring the guilty persons before the law, with satisfying results. The national government, in his opinion, is not affording sufficient protection to the men who desire to work in the face of opposition by organized strikers, and the operators, therefore, have a right to protect their properties, and the men who are at work thereon, by employing mine guards and every other form of protection that can be had.

"That is what we are getting out of Washington," he declared, referring to the attitude of officials of the government toward the coal situation. "We are getting gassed. The sense of our people is being attenuated. We have the massacre at Herrin. The high public officials roll their eyes and say, 'Too bad!' A wonderful picture, but think of the men who were killed at Herrin; think of their families left behind! Instead of Herrin striking the spark which should set this country aflame for the punishment of murder, for the enforcement of law, for the protection of your rights, your liberties and mine—what did it do? It gave encouragement for the same crowd to march into Brook County, W. Va., and try the same thing!

"Now, gentlemen, we come to the crux of the labor problem. It is a question of the enforcement of the law that we have got—labor courts, boards of conciliation—put them in the waste paper basket! Give the man who wants to work and who has the right to work the protection which he deserves. There wasn't a time during this strike that the mines could not have been manned by men who wanted to work, but they were

afraid—afraid they would be massacred as others were at Herrin."

The public does not realize the extent to which the labor oligarchy today controls the industry, and thus controls the price at which fuel is sold, Mr. Bradley asserted, and yet with this condition apparent, those who should lead, he declared, do not meet the issue. In this connection he said:

"And when you get the entire fuel resources of the nation in the control of such an unscrupulous small group of men, you can sit around the table and say, 'Now, John, you wouldn't do that!' I was in Washington immediately after the railroad strike began. I had just come down from New England. I had just read that burning editorial asking us for a Grover Cleveland, and I got to Washington, and it was: 'Oh, well we can't do that! It wouldn't do to do that!'

Mr. Bradley assured his associates operating in the union fields that they might call freely for his coal at any price they may set for it to keep their customers going while they fight off the "yoke." The problems must be solved along the lines suggested by the speaker, or in his opinion government ownership and control are inevitable. The high public officials should see before another April that the leaders of the labor oligarchy, numerically in the minority, shall not again "hold up" the great majority of 110,000,000 people, Mr. Bradley concluded.

NEW MEXICO CHAPTER ELECTS OFFICERS

THE NEW MEXICO CHAPTER of the American Mining Congress held its second annual meeting October 2, in Silver City, N. M.

The meeting was called to order by the Governor, John M. Sully, and seventeen members were present. The newly elected officers are:

John M. Sully, governor; S. J. Kidder, first vice governor; Powell Stackhouse, Jr., second vice governor; and G. A. Kaseman, third vice governor. The Executive Committee: John M. Sully, C. T. Brown, and E. M. Sawyer. Board of Directors: C. T. Brown, E. M. Sawyer, J. M. Sully, Ira L. Wright, Powell Stackhouse, Jr., B. B. Hanger, S. J. Kidder, L. M. Kniffen, F. W. Vellacott, I. J. Stauber, J. B. Gilchrist, H. G. S. Anderson, G. A. Kaseman, and V. Carl Grubnau.

Professor E. H. Wells, president of the New Mexico State School of Mines, was authorized to represent the Chapter at the Cleveland convention of the American Mining Congress.

Many interesting discussions as to the operative end of the mining industry developed and proved beneficial as well as entertaining to all those who attended.

FUTURE PROSPERITY PLANNED FOR MINES OF SOUTH

Cleveland Convention Makes Progress on Work Initiated at Chattanooga—Water Power and Transportation One of the Major Issues—To Develop Full Benefits Held by New Tariff Provisions

THE PROBLEMS of the Southern Mineral Industry were carefully discussed at the Cleveland convention of the American Mining Congress, during which the Board of Governors of the newly created southern division of the organization met in conference.

RÉSUMÉ OF PREVIOUS WORK

This conference took the form of a résumé of the recent meeting in Chattanooga at which the division was organized. A continuation from that meeting of the spirit that the mining industry of the south has a more cheerful outlook now than ever before was obvious at Cleveland. The division's devotion to its announced purpose of assisting in the further development of the "vast mineral empire of the south" and that it strive to capitalize every one of the favorable conditions now before it. Thus its program centers mainly around development made possible by the new tariff law and also the potential benefits to be derived from vast potential water power resources.

The mining industry of the South is interested in the development of Muscle Shoals. For the heavy tonnages of coal and ores which can be produced and shipped from the richly mineralized country through which the Tennessee River flows, the use of barge lines on the river would increase possible production many times. These barge lines will become possible when the power projects have been completed.

The mining industry is equally interested in the development of power from these dams for the use of individual mining operations and to supply the electric furnace plants and many individual manufacturing enterprises which will be the natural outgrowth of the development of this great southern mineral empire.

It has been apparent ever since the committee reports on the various proposals for the development of Muscle Shoals that none of the proposals now before Congress will be accepted without material changes which will take into consideration the rights of the people in the development of this power and the enormous expenditures which have been made by the government.

HEIGHT OF FOLLY

In view of the disclosures, scandals, and even indictments which have followed the disposal of other war-time governmental investments to private in-

dividuals, such as Old Hickory, Hog Island, and sales of governmental surplus property, it would be the height of folly for Congress to consider any offer for Muscle Shoals which did not give a fair return for the one hundred million dollars already invested there by the government.

Since the introduction of the Hull bill it is apparent that the trend of Congress is more and more toward the placing of Muscle Shoals under general legislative provision rather than under a special governmental subsidiary.

It is apparent that the thinking people of the South are without exception deeply desirous of Muscle Shoals development, and that they are anxious to support whatever proposal will finally prove acceptable to Congress, which will also insure adequate power for individual industries and improved transportation facilities.

At the Chattanooga meeting every delegate who spoke on the subject of the water power development took this position. As one of the delegates then stated "The thing for us to do is to bury all differences of opinion and get back of a broad constructive plan for the development of a superpower zone."

The unified expression of mining policy made possible by the southern division will be a great source of strength to the mining industry of the South. Southern delegates in attendance at the Cleveland convention are deeply interested in the problems of taxation and transportation.

CONTINUOUS OPERATION ASSURED

Those industries which have been protected by the new tariff act are assured of continuous operation. All in all, the mining industry of the South has a more cheerful outlook than it has had for many years.

The Board of Governors of the southern division of the Congress is composed of the following: J. B. McClary, Birmingham, Ala.; Lee Long, Danta, Va.; P. D. Berry, Providence, Ky.; William H. Lindsey, Nashville, Tenn.; J. F. Wheless, Raleigh, N. C.; C. O. Bartlett, Miami, Fla.; E. L. Hertzog, Spartanburg, S. C.; C. C. Houston, Monroe, La.; W. S. Peebles, Cartersville, Ga.

Election of this board came at the conclusion of the Chattanooga meeting. The gathering, which included representatives from each of the southern states, passed resolutions in which the Interstate Commerce Commission was called upon to

make a complete survey of the available cars on all railroads, the object being to enforce distribution of cars to various sections of the country in proportion to the normal freight haulage handled in each. Were it not for the tangled transportation situation, it was declared, the southern mineral industry could be enjoying the unparalleled prosperity which is forced to await solution of this and other problems. Discussion of taxation difficulties brought a resolution to refer matters on this subject to the parent organization headquarters in Washington for the purpose of adopting a policy of relief for presentation to the government.

POSSIBILITIES ARE OUTLINED

Following the opening of the meeting, with Henry Mace Payne, consulting engineer of the Congress, presiding, a message from Richard H. Edmonds, publisher of *Manufacturers' Record*, was read, the text being in part as follows:

"The vast mineral resources of the South covering much of the territory from Maryland to Texas, have never been adequately investigated or exploited. The work that has been done is exceedingly small as compared with the possibilities of the region. The very fact that the South has a coal area five times as great as all of Europe, excluding Russia, and twice as great, including Russia, is merely indicative of the other resources of the section. Here is a region which is producing 99 percent of the sulphur of this country and about 75 percent of the world output. The South is producing nearly 60 percent of the oil output of the United States and holds more than half the oil reserves of the country. But these outstanding interests are only indicative of the other resources which to some extent have been developed in part, but which to a very large extent lie dormant awaiting the magic touch of the engineer's skill and the capital needed to turn the latent resources into wealth and employment creating actualities."

INDEPENDENCE IS NECESSARY

James F. Callbreath, secretary of the Mining Congress, addressed the conference, outlining the work of the organization and expressing the opinion that for the first time in history people are awake to the possibilities of the country and that with the immense amount of capital available the great mineral empire of the South will be stimulated to a larger production.

Herbert Wilson Smith, chief of the Congress's department of tariff and economics, addressed the meeting on the railroad transportation situation. Forrest Andrews, of Knoxville, presented a review of statistics concerning equipment of the various roads and entered into an analysis of the cause of the equipment shortage, declaring that the only remedy rests in cooperation between the entire railroad industry of America. W. R. Crane, of the United States Bureau of Mines, addressed the meeting

briefly, outlining the work of the bureau and reviewing mineral development possibilities of the South.

The board drafted a resolution presented to and adopted by the convention pledging the Mining Congress to endorsement of the sound, economic policy of the development of our water powers "under such provisions of general law as will prevent monopoly and insure adequate power to communities and industries which may be economically served therefrom and developed thereby."

been idle on our "world job." There has been expended \$23,751,000,000 since 1914, according to the official figures, to help the other fellow.

"Now in our further efforts to help him, let's study the situation. We are all guessing on this European matter. It isn't a question of somebody being absolutely right and somebody absolutely wrong. Everybody else is guessing and what miraculous quality of mind do we possess which will enable us to stand back here, and without any sufficient world experience practically hit it at our first guess, at our first try? It isn't to be so. We can't do it. Let's go along as we have been until we can see more clearly than we can see at the present time, and I imagine more clearly than we can see for some time to come. Our commercial credits are still being extended, and will continue to be. We are doing things. We are not doing things that count."

The items making up the immense sum, Mr. O'Reilly said, which have been expended in our effort to help Europe since 1914 came from the records of the comptroller of the Treasury and the Hoover Relief Committee, and are as follows:

"A total of \$23,751,000,000 of good United States money—not all of it charity, but all of it expended in charity and in relief loans of one kind or another to the people of Europe!"

It was Mr. O'Reilly's opinion that we are doing "something."

A SLANTING VIEW OF EUROPE

G. A. O'Reilly, New York Banker, Gives Mining Men a Look Through His Eyes at the International Situation—No Marking of Time, He Says

IS AMERICA Living up to Her World Responsibilities?" This was the large question asked in the title of the address delivered before the annual convention of the American Mining Congress by G. A. O'Reilly, vice-president of the Irving National Bank of New York. Mr. O'Reilly answered it in the affirmative, setting down in figures of black and white some of the things this country has done to relieve the economic situation in Europe. By loans, credits, contributions and charity, he said, we have disbursed in Europe since 1914 \$23,751,000,000.

SOUNDS FORMIDABLE

"The question sounds formidable," Mr. O'Reilly said, "big, and all that, and it may be that the subject has been worn to a frazzle. Still, it seems to me that in these times, while it may not be possible to say anything that will be entirely new upon this subject, it is proper at least, and possibly very important that we begin thinking anew on this very subject. It is so easy for a great, splendid, energetic, dynamic nation like ours to do a great deal of harm if we get headed in the wrong direction."

With this thought as a preface, Mr. O'Reilly counseled patience among the American people—those who urge that "they" do "something" to relieve the world's economic tangle. He counseled

the "patience of Job," because it is not enough just to "do something," but to be sure that something is right, and that our action will lead toward some constructive thing, rather than just to move, perhaps in circles, so far as effect on world conditions is concerned. Much discussion has been had as to the making of additional loans to the governments of Europe, Mr. O'Reilly said, thereby throwing still further out of balance a world situation whose nearly total lack of balance is responsible for most of the business troubles of the world today.

Mr. O'Reilly also referred to the recent rather free discussion about some sort of easing up or wiping off of foreign obligations, and suggested that such relief might also make it easier for those countries to do certain things "we wish they would not do, and develop along certain lines which we consider dangerous to the peace of the world."

Mr. O'Reilly asked his hearers not to confound the admonition to be patient with a recommendation of timidity. The situation, in his belief, requires careful thought and consideration, and a purpose to "go slow." "We have obligations beyond the other side of the water," he said. "We can't be 'pikers!' No 'piker' ever has been popular since the year One, and a 'piker' nation is unthinkable, but our most effective work will be on our own job. But we really have not

These items, making up an immense sum, Mr. O'Reilly declared, have been expended in our effort to help Europe since 1914 were taken from the records of the comptroller of the Treasury and the Hoover Relief Committee, and are as follows:

| | |
|---|-----------------|
| American securities repurchased from abroad..... | \$3,000,000,000 |
| American government loans..... | 10,000,000,000 |
| Interest on government loans..... | 2,000,000,000 |
| Commercial credits extended abroad..... | 3,000,000,000 |
| Dollar securities bought from foreign countries in 1919, 1920, 1921 and 8 months in 1922..... | 2,631,000,000 |
| Foreign money securities sold in this country in same period..... | 620,000,000 |
| Foreign currencies bought by America..... | 500,000,000 |
| Money expended in relief operations by organizations of which Mr. Hoover has been chairman..... | 2,000,000,000 |
| Total | 23,751,000,000 |

OFFICIAL DELEGATIONS AT CLEVELAND

GOVERNORS of twenty-eight states, mayors of fifty municipalities and heads of other governmental agencies and divisions vitally interested in the welfare of the mining industry, appointed special delegations to attend the Twenty-fifth Annual Convention of the American Mining Congress and the Exposition of Mines and Mine Equipment held in conjunction. These official state and city delegations now have returned to make reports to the executives by whom they were appointed. Through this network of liaison the elements of the mining industry throughout the country will receive intimate information concerning the work accomplished and the conclusions drawn by the Cleveland convention. In addition to the state and various city delegates, 130 trade and commercial organizations throughout the country designated representatives.

"The interest placed by the various mining states in this convention," declared E. C. Porter, convention manager, "is reflected in the size of official delegations and in the importance of men chosen as state representatives."

MILESTONE REACHED IN STANDARDIZATION WORK

Reports Submitted to Cleveland Conference Indicate Large Volume of Work Accomplished During Year—Permanent Standards Recommended

THE THIRD NATIONAL Standardization Conference was remarkable in its presentation of the amount of work accomplished during the year by the Standardization Division of the American Mining Congress, in the able addresses delivered before it, and in the wealth of information it received from the reports of the fourteen sections of which it is comprised. The activities engaging the division's attention since the preceding conference were ably outlined by Colonel Warren R. Roberts, chairman of the coal mining section, and Charles A. Mitke, chairman of the metal mining section. Apart from these presentations and portions of the conference occupied by the delivery of addresses, the sessions were devoted exclusively to discussion of reports of the sectional committee chairmen.

FINAL REPORTS SUBMITTED

Five reports were submitted to the American Engineering Standards Committee as final recommendations for permanent standards. These reports covered the following subjects: Underground transportation, coal section; outside coal handling equipment, coal section; mine drainage, coal section; and underground power transmission and power equipment, coal section. Compilation of these reports does not conclude the work of these committees, however, but their recommendations upon the phases of the subjects they already have considered are final and have been submitted to the American Engineering Standards Committee in that status.

The program included reports from committee chairmen and discussion by the conference covering the following subjects:

- Drilling machines and drill steel.
- Underground power transmission and power equipment.
- Mining and loading equipment.
- Mine timbers.
- Metal mine accounting.

Underground transportation.

Mine ventilation.

Milling and smelting practices.

Outside coal handling equipment.

Fire fighting equipment.

Mine drainage.

Methods of mine sampling.

Steam shovel equipment.

Mechanical loading underground.

AUTHORITIES ADDRESS SESSIONS

The conference heard addresses by Colonel L. R. Ruggles, United States War Department; Dr. John Bonsall Porter, honorable secretary of the Canadian Engineering Standards Association of Montreal, Canada; H. C. Morris, chief of the Division of Domestic and Foreign Trade of the Department of Commerce; and Dr. George K. Burgess, director of the National Bureau of Standards, Washington, D. C. A meeting of the General Correlating Committee was held on the last day of the convention. The following organizations are represented on this committee:

The United States Bureau of Mines.

The National Safety Council.

The American Mining Congress.

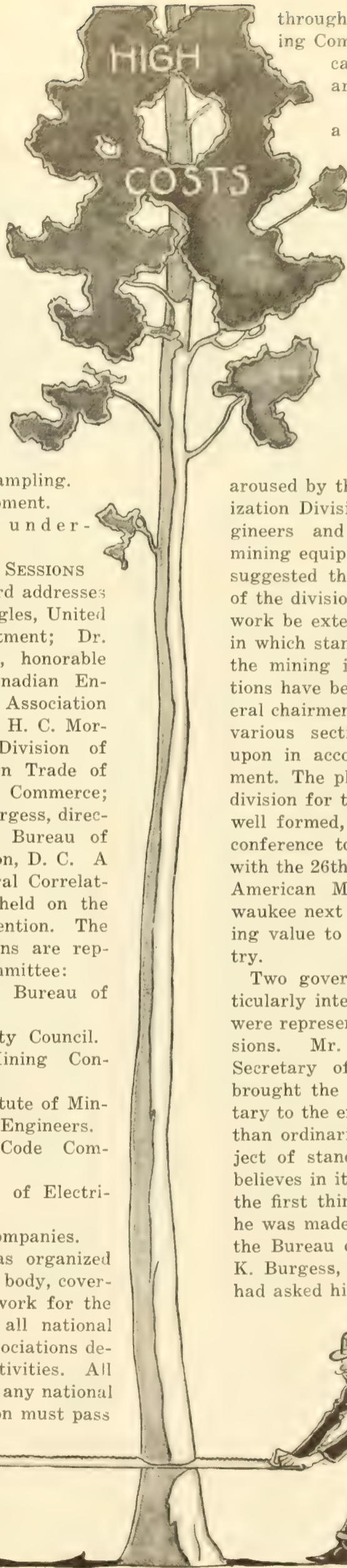
The American Institute of Mining & Metallurgical Engineers.

National Safety Code Committee.

American Institute of Electrical Engineers.

The Associated Companies.

This committee was organized to act as a reviewing body, covering standardization work for the mining industry by all national organizations and associations devoted to these activities. All work of this type by any national society or organization must pass



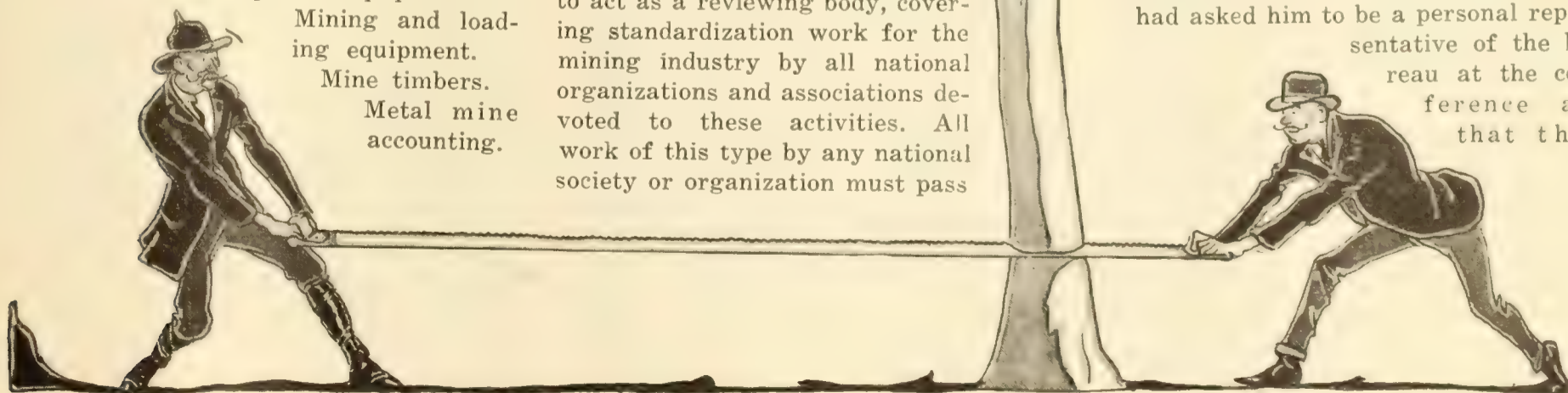
through this General Correlating Committee up to the American Engineering Standards Committee.

The conference adopted a new method in presenting its work to the convention in that all of the committee reports were printed and distributed in advance and each committee chairman therefore discussed only the high points in his report, later calling for general discussion.

Because of the volume of interest

aroused by the work of the Standardization Division among operators, engineers and the manufacturers of mining equipment, it has been broadly suggested that the present personnel of the division be doubled and that its work be extended to cover every field in which standards apply in regard to the mining industry. These suggestions have been submitted to the general chairmen and the chairmen of the various sections and will be acted upon in accordance with their judgment. The plans for the work of this division for the year 1923 already are well formed, and the fourth national conference to be held in conjunction with the 26th annual convention of the American Mining Congress at Milwaukee next year will be of outstanding value to the entire mining industry.

Two government departments particularly interested in standardization were represented at the Cleveland sessions. Mr. Morrison, representing Secretary of Commerce Hoover, brought the message from the secretary to the effect that he is even more than ordinarily interested in this subject of standardization. Mr. Hoover believes in it thoroughly. It is one of the first things that he started when he was made Secretary of Commerce; the Bureau of Standards, Dr. George K. Burgess, stated that Dr. Stratton had asked him to be a personal representative of the bureau at the conference and that this



GOVERNMENT VALUES STANDARDIZATION

Activities of Government Agency Seeking to Increase Industrial Economics Outlined Before Cleveland Convention

agency has watched the standardization movement in the American Mining Congress since its foundation with a great deal of sympathy and admiration. No government bureau can put over standards without cooperation from other agencies, he pointed out. Standards for use in industry must originate in industry. The role of the government bureau in standardization in fact, except insofar as experimental work is done, is to act as a correlating agency.

Dr. Burgess paid a special compliment to the work of the division by saying: "In truth and frankness I know of no organization carrying on its work more thoroughly or with a greater zest and spirit and comprehensiveness and intelligence than this body is doing."

Colonel Ruggles, representing General Wainwright, Assistant Secretary of War, emphasized the necessity of standardization of man power during period of war. He advocated emergency laws for the universal draft.

While the work done during the year 1922 is of vast importance to the mining industry and although adoption by the industry as a whole of the standards already formulated will result in a saving of millions of dollars in production cost, the American Mining Congress feels that the work of the Standardization Division has only fairly been launched.

The subject is a vast one and is receiving the earnest consideration of the ablest men in the mining industry both from the standpoint of the operator, the mining engineer and the manufacturer of mining equipment. It is receiving the cooperation of all of those agencies working to the same end and it is anticipated that final adoption of these standards by the American Engineering Standards Committee will increase the efficiency of the mining industry to an appreciable extent.

The conference adopted a resolution, submitted and approved by the convention, outlining the necessity for diligent application to standardization work in the interests of economy and efficiency, urging continuation of these efforts in magnitude, and pointing out the benefits to be gained by the mining industry through adoption of the comprehensive and helpful suggestions already made by the division. The following paragraph concludes the resolution:

"Be it further resolved, That the thanks of the American Mining Congress be extended to the respective chairmen and the personnel of their committees."

THE DEPARTMENT of Commerce, primarily devoted to the task of rendering industrial operations in this country more efficient and more prosperous, is keenly interested in and alive to the possibilities held by the program of the Standardization Division of the American Mining Congress.

The official expression of the department on this subject was presented to the Cleveland convention of the Mining Congress by Secretary Hoover's representative at the sessions, Henry C. Morris, chief of the Petroleum Division of the Bureau of Foreign and Domestic Commerce, being framed in the following paragraphs:

The tremendous economies secured through standardized machines and equipment have long been one of the outstanding superiorities of American methods in contrast with those of European and other foreign nations, but while we have obtained some of the advantages in special instances, the nation as a whole has continued to suffer from the enormous wastes of over-diversification and individual variation. With Great Britain, France, Belgium, Sweden, and especially Germany now concentrating on standardized products, a much greater standardization of our American exports becomes vital, and with the Federated American Engineering Societies' "Elimination of Waste" report indicating forty percent of capital, of thought and of labor in six typical industries wasted—and one of the major causes of this waste, lack of standardization—our domestic condition requires particular concentration of thought on this subject.

ACTIVE IN "SIMPLIFICATION"

The Department of Commerce is at present most active in that elemental form of standardization known as "simplification," which concerns itself particularly with the elimination of excess variety, or the concentration of effort on the comparatively limited portion of any line which is widely demanded and which in most cases accounts for the greater part of the output and consumption. The decisions of the paving brick industry to reduce from 66 to 7 recognized sizes of paving bricks and of the various bed interests to limit bed sizes to one length and four widths are examples of the valuable support the Department of Commerce can give.

Our service consists, first, in aiding the manufacturers of any product to survey present conditions in order to dis-

cover all the varieties offered and their comparative importance; second, in getting the manufacturers, distributors and users together to discuss possible eliminations, and then in publishing and supporting the recommendation of such joint conferences as to limited recognized varieties which shall be hereafter considered standard. Finally, the department keeps in touch with production under these recommendations and arranges further conferences which modify them from time to time, in order to keep the recognized standards abreast of the advance in the article.

It is not the purpose of the department to in any way interfere in private business, but, on the contrary, to cooperate with business in building up such situations as make to set up a bulwark against continued extension of bureaucratic interference. Cooperation of large consumers' associations, together with manufacturers' associations, can establish grades and qualities and simplified standards of many articles of common use which make for economy in manufacture and distribution. This is particularly the case in questions of specifications as to quality and in dimensions which in no way interfere with individual development, the true basis of progress.

SEEKS TO FACILITATE

The service of the department is merely to bring together the different groups, after their own approval of such action, and to assist and facilitate their deliberations.

In the mining field, this service of the department is available in simplifying equipment, supplies, tools, and, indeed, in supporting the opinion of the industry in any simplification or standardization which a joint conference shall decide will make for greater stability, decreased costs and increased profits to all concerned. While at first thought the plan may not seem directly applicable to mining, it is certainly worth investigation. The fact that the great lumber industry—third most important of our national business—has found this program of such importance that it proposes to make it the major association activity this coming year, may serve to emphasize the probability that a committee of this Mining Congress, working with the department, will find in Secretary Hoover's proposals promise of great benefit.



A GROUP OF EXHIBITORS AT THE CLEVELAND EXPOSITION

MANUFACTURERS' DIVISION ELECTS OFFICERS

THE MANUFACTURERS' Division of the American Mining Congress, which was successfully inaugurated following the exposition of mines and mine equipment in Chicago in 1921, took a long step forward in the development of its plans as a result of the convention and exposition held in Cleveland.

The purpose of the Manufacturers' Division is to build up a strong and representative group of manufacturers as a permanent body to cooperate with the American Mining Congress in the further development of these great annual expositions of mines and mine equipment. The cooperation of representative manufacturing concerns in the supervision and direction of these expositions will tend to increase their importance and to make them a focus point both for the operating officials in charge of mining enterprises and of the manufacturers of mine equipment and mine machinery. In fact, the continued success of these expositions will be largely dependent upon the cooperative effort of the manufacturing concerns participating as members of the Manufacturers' Division.

ACTIVE INTEREST SHOWN

On Wednesday, October 11, all of the exhibitors at Cleveland were invited to attend a luncheon at the Hollenden Hotel in order to frankly discuss the plans both for the Manufacturers' Division and for the further development of these expositions. Between 75 and 100 persons were present and a great deal of active interest was shown in the presentation of the reports of the year's work and of the plans for the future.

Under the guidance of W. C. Doering,

vice-president of the Southern Wheel Company of St. Louis and chairman of the Board of Directors of the Manufacturers' Division, there was a general discussion of the purposes of the Manufacturers' Division and of the arrangements for these expositions.

Upon motion duly made and seconded, the following gentlemen were elected to act as members of the Board of Directors of the Manufacturers' Division of the American Mining Congress during the coming year: W. C. Doering, St. Louis, Mo.; N. S. Greensfelder, Hercules Powder Company, Wilmington, Del.; H. K. Porter, directing mine car engineer, Hyatt Roller Bearing Co., New York City; J. C. Wilson, manager mining sales department, Ohio Brass Company, Mansfield, Ohio; F. L. Morse, vice-president, Morse Chain Company, Ithaca, N. Y.; H. F. Reck, president, Streeter-Amet Weighing & Recording Company, Chicago, Ill.; William Whaley, general manager, Myers - Whaley Company, Knoxville, Tenn., and J. F. Callbreath, secretary, American Mining Congress, and E. C. Porter, convention manager of the American Mining Congress, who served ex-officio as members of the Board of Directors of the Manufacturers' Division.

Upon motion, duly made, seconded and unanimously adopted, the above Board of Directors of 9 was authorized to act as the Board of Directors of the Manufacturers' Division of the American Mining Congress and was also authorized to elect other members of the Board of Directors until the entire number of 15 is filled.

The Board of Directors of the Manu-

facturers' Division then elected as officers of the organization: W. C. Doering, chairman of the Board of Directors; N. S. Greensfelder, first vice-chairman; J. C. Wilson, second vice-chairman; H. K. Porter, third vice-chairman, and E. C. Porter, secretary.

CLOSER CONTACT ESTABLISHED

In addition to forming the permanent organization and to developing an increased interest and enthusiasm in the possibilities for the development of the Manufacturers' Division, one of the very important accomplishments was the creation of a closer contact and a working cooperation between the parent organization, the American Mining Congress, and the Manufacturers' Division, through the election of W. C. Doering, chairman of the Board of Directors of the Manufacturers' Division as a member of the Board of Directors of the American Mining Congress.

It is believed that as a result of the success of the Cleveland exposition and convention that the Manufacturers' Division of the American Mining Congress will soon become one of the most important factors in the development of the entire work of the national organization and that the working cooperation between the manufacturers and the mine operators will result in permanent and lasting benefit to the entire industry. The successful meeting at Cleveland well may be the starting point for national movements in connection with the increased utilization of labor-saving and cost-reducing mine equipment and machinery which will be of greatest importance to the industry as a whole.

TELLS COAL INDUSTRY TO STUDY ITSELF

James A. Emery of Manufacturers' Association Tells Operators at Convention That Time is Ripe for Them to Make Declaration of Policy Based Upon Self-Analysis

THE PRESENT is the most propitious time in history for the coal industry to enter upon a concentrated self-examination, self-analysis and self-declaration of policy for self-government, James A. Emery, of the National Association of Manufacturers, told coal men at the Cleveland convention of the American Mining Congress in October. "Know thyself," Mr. Emery, advised, in discussing his subject, "Public Policy for the Coal Industry."

"The need for a public policy, arrived at after careful analysis of facts gathered from within, is apparent," Mr. Emery said, "and particularly so to the man who observes, as an outsider, free from prejudices, the conditions under which the industry is working. The difference between the solidity of the worker's organization on the one hand and the disintegrated and disunited operators on the other hands shows the need for the selection of responsible spokesmen to speak the collective thought and express the collective judgment and state the collective policy of the entire industry," Mr. Emery declared.

A STRIKING CONTRAST

"During six months of deliberately suspended production," he said, referring to the recent strike, "the outsider has perceived upon the one hand a solid, unified organization of workers so powerful that it has been able to successfully resist not only economic argument but official persuasion; and, on the other hand, he has perceived a great industry of highly intelligent and responsible operators disintegrated and disunited, with no single responsible group or spokesman who could speak for them.

"Does that not suggest, gentlemen, that there was never a more favorable, a more desirable, a more necessary moment in which this great industry should enter upon a highly systematic, organized self-examination, self-analysis and self-declaration of policy for self-government?"

Mr. Emery suggested that such examination should be scientific. It should contemplate every phase of the coal industry and their relation to all other industry, because all are interdependent in today's complex civilization. Even the public view of the situation, he said, included the necessity of finding facts, as is shown by the appointment of a so-called Facting-Finding Commission.

Whether this commission will really find the facts, or merely paint a picture of its theories, was Mr. Emery's concern. Whatever the commission may do, the industry should make its own findings, in his belief.

THE TEST OF OWNERSHIP

The right to control property is the test of ownership, the speaker said, and not merely the holding of the title deeds, and civil liberty as a fact in American life cannot permit the setting aside of the essential relationship between the maintenance of liberty and the preservation of the principle of private property. When control disappears, Mr. Emery declared, ownership dies with it.

"What would any one of you care for an offer of a million dollars from the richest man in America, deposited to your credit in the bank, if you could not check against it? The title would be in your name; the use of the property would not be yours.

"It is essentially in the public interest that the controls of private property shall be preserved within the limits of public interest; and these change with the intensity and complexity of public life; because government is no longer a mere maintainer of order—it must, under the circumstances of modern life, undertake to carry out production and distribution against arbitrary interruptions, and these high obligations have fallen upon it with an intensifying degree of necessity."

Emphasizing his advice to "know thyself," Mr. Emery declared no industry is so well fortified to meet the facts of life today as the one that knows itself, and by critical examination is prepared to present an accurate picture of its own operation. Thus they will live under no delusions with respect to their defects, because, until men know what is the matter with them, they can not cure themselves. The substitution of political answers for economic answers to great economic questions cannot succeed, and the coal industry's policy must be predicated upon its own facts.

"SHOULD MAKE SELF KNOWN"

"The coal industry should not only make itself know as it is to the public, but to the public's representatives. It is an easy matter to 'cuss' Congress; we all do it, and then we rest ourselves by 'cussing' the state legislature and the local board of aldermen. But, gentlemen, representative government is a mirror in which we reflect ourselves, be-

cause it not only pictures our virtues, but it very accurately defines our defects, and the besetting sin of American business has been indifference to politics."

Business ought to get into politics, Mr. Emery stated, because, if the nation is to endure, it must continue to be what its founders believed it would be—an aristocracy of intelligence and character, directing a democracy of right and opportunity.

"Remember, gentlemen, if you do not sit in the saddle and correct evil and guide the horse of reform, there are many willing riders who think they can ride the beast better than you can!"

The coal industry must also be ready in an organized way to frankly face the problem of its own employment relations, Mr. Emery asserted. The regulations it now faces are invalid. Emergencies have excited government, under popular pressure, to extreme exercises of unusual power, and the neglect of the industry itself to establish social controls in the public interest that would insure the protection of public right, he inferred, is partly responsible. The use of the miner's unions by some operators to "equalize" what is termed competition was a factor in bringing conditions to their present stage.

Today the field of employment relations in the coal industry represents a condition that threatens the economic and social security of the United States, he said. "Why, gentlemen, I think that the field of coal regulation today is the last great battleground of local self-government as opposed to overwhelming federal control!"

COURT SETTLEMENT ADVOCATED

Commenting on the recurring disagreements as to interpretation of contracts, and the settlement of such disagreements by the force of the stronger interpreter, Mr. Emery advocated the settlement of such differences by a court of competent jurisdiction, and the filing of all contracts in a Court of Record to be made there the subject of judicial interpretation and enforcement. This would leave to the men who undertook to resist the recommendation, the position of standing before the people of the United States, 600,000 strong, and saying: "We enter into no contract that we do not personally interpret and enforce by our might!" Such position would be untenable and impossible, Mr. Emery said.

Concluding, Mr. Emery said there cannot exist in America anything but the fairest and most just relationship between management and employe, and no relationship between the two can exist with success for either that is not predicated upon a real human relationship.

MINING CONVENTION GRAPPLES WITH ISSUES

Group of Strong-Spined Resolutions Developed By Sessions—Efforts of Delegates Directed With Force Against Perplexing Situations—Definite Policy Embodied In Texts Adopted

MATCHING of many of the mining industry's keenest minds against the problems and issues confronting operators of mineral developments produced a series of strong resolutions adopted by the Twenty-fifth Annual Convention of the American Mining Congress, held at Cleveland, October 9-14. These resolutions, covering the span of the delegates' discussions, form a credo by which the mining industry proposes to abide, not only during the forthcoming year but so long as the subjects dealt with continue to assert themselves as demanding attention.

The resolutions were framed by individuals and in conferences of various divisions of the parent organization, being presented to the resolutions committee of the convention and later placed before the delegates for discussion and action.

The first resolution brought before the convention carried a proclamation distinctly new in affairs industrial. It urged cooperation between employers and employes throughout the country in a movement having for its ultimate accomplishment "harmonious relations, continuous employment, fair wages, reasonable profits and the cheapest priced commodities to the consumer which these conditions will permit."

INDUSTRIAL RELATIONS

The text of this resolution follows:

Resolution No. 1, introduced by H. F. Lunt, of Colorado:

WHEREAS, The average prices paid for labor and all other commodities are regulated by the law of supply and demand; and

WHEREAS, The best service is always given by

those interested in their work and whose aim is to bring about the largest possible production; and

WHEREAS, All wages must in the end be derived from the selling price of the commodity to which labor is applied; and

WHEREAS, There has arisen a marked tendency, in recent years, augmented by war conditions, to decrease the service rendered both through shorter hours and the suggestion that the full man-power of the nation shall not be applied to continuous production through a fear of economic idleness; and

WHEREAS, The larger the production in all lines and the greater the competition in all markets, the lower the price will be to the consumer, and the greater amount of commodities will be available to the wage earner whose wages will have greater purchasing power because of the competition developed by full production; and

WHEREAS, Efficient production is accomplished only through complete cooperation between employer and employe; and

WHEREAS, Many of the various plans for industrial cooperation now in operation have brought about larger man production, better wages, high purchasing power for such wages and, at the same time, stabilized the business of the employer; and

WHEREAS, It is desirable that such relations may be established between all employers and employes as will bring about the greatest efficiency and the most complete happiness and contentment that the best living conditions may be obtainable and that the aspirations of workmen and employers may be realized without resort to strikes and lockouts; therefore be it

RESOLVED, That the Committee on Industrial Cooperation which has been organized by the American Mining Congress has the full endorsement and approval of this convention, and that the American Mining Congress through the Board of Directors be directed to further the general plan by all means within its power; and be it further

RESOLVED, That employers and employes throughout the country be urged

to cooperate in a general movement which shall have for its ultimate accomplishment harmonious relations, continuous employment, fair wages, reasonable profits and the cheapest priced commodities to the consumer which these conditions will permit.

Elimination of all unnecessary paternalistic activities on the part of federal or local governments was seen as a prime need by the convention, and a resolution introduced by B. C. Yates, of South Dakota, pledged the organization's efforts to secure this elimination. The resolution follows:

INCREASING GOVERNMENTAL PATERNALISM

Resolution No. 2, introduced by B. C. Yates, of South Dakota:

WHEREAS, The tendency toward continually increasing governmental functions for the control of private industry and the restrictions imposed by national, state and municipal governments on business and individual activities has caused increasing anxiety to all thoughtful persons; now, therefore, be it

RESOLVED, That the American Mining Congress pledges its cooperation to eliminate all unnecessary paternalistic activities upon the part of national or local governments.

The transportation quandary long has knotted industry's brow, and the convention could not have felt its work completed had it not taken a direct step toward throwing its power into an effort to clear the situation. Realizing the complexity involved, it became apparent to the delegates that a thorough investigation of conditions is necessary for the purpose of developing facts which would eliminate and prevent recurrences of discriminations against the mining industry in freight charges. Under the following resolution, introduced by T. O. McGrath, of Arizona, a committee was authorized to enter into this investigation, the personnel to be announced at a later date:



THE TRANSPORTATION QUESTION

Resolution No. 3, introduced by T. O. McGrath:

WHEREAS, The revenue from more than 60 percent of the total tonnage handled by the railroads of the United States is derived from the mining industry; and

WHEREAS, Existing freight tariffs unquestionably contain inequalities which discriminate against the mining industry; therefore be it

RESOLVED, That a Committee on Transportation be appointed and directed to make detailed research into the relative costs of transporting raw materials and the charges made for such transportation service, as compared with the charges on other commodities, to the end that the mining industry may be advised as to whether the charges paid by it are fair and equitable as compared with the charges for the transportation of the products of other industries.

Continuing in its round of handling the various issues, the convention next took up the question of blue-sky legislation, having before it a resolution presented by H. W. Seaman, of Chicago, in which was embodied a declaration of the organization's policy on this subject. The resolution launched a direct attack upon the Denison bill, already passed by the House and now before the Senate, which measure has made more progress than any other piece of similar legislation ever proposed for federal enactment. The convention, however, made it plain in the text of this declaration that it stood in favor of any legislation necessary to protect the public against fraudulent promotions of all kinds, condemning only those measures which set powers immune from appeal upon individuals or commissions to pass upon investments. The resolution reads:

BLUE-SKY LEGISLATION

Resolution No. 4, introduced by H. W. Seaman, of South Dakota:

WHEREAS, Attempts have been made in various states to set up individuals or commissions to pass without appeal upon investment; and

WHEREAS, Such attempts toward "Blue Sky" legislation only tend to handicap the development of natural resources without materially safeguarding or protecting investors; therefore be it

Resolved, That the American Mining Congress strongly favors whatever legislation may be needed to safeguard the public against fraudulent promotions of all kinds, but condemns all measures which set up individuals or commission to pass without appeal upon investments and all legislation which embodies the principle of the so-called Denison Blue Sky bill, violates individual rights and destroys that initiative upon which the

mining industry of the United States has reached its present proportions.

Appreciation to the Sixty-seventh Congress for the benefits extended by it through the new tariff bill, aiding continued employment and insuring fair economic consideration of the industry, was extended in the following resolution:

THE TARIFF

Resolution No. 5, introduced by E. H. Wells, of New Mexico:

WHEREAS, After three years' earnest effort the mineral industries of the United States have received more equitable economic consideration under the tariff law recently enacted, than ever before accorded them; and

WHEREAS, The protection here afforded will mean the continuous employment of many thousands of men, and the development of our natural resources; therefore be it

RESOLVED, That the American Mining Congress in twenty-fifth annual convention assembled, at Cleveland, Ohio, October 9-14, 1922, extends to the Sixty-seventh Congress of the United States, its grateful appreciation.

Realizing that the confidence and respect of the country must be won by the oil shale industry during its present embryonic days if it is to achieve the early foundation which is to enable it to provide the future supply of oil for the nation, the convention adopted a resolution drawn by the oil shale conference.

The text of this measure follows:

OIL SHALE

Resolution No. 6, presented by Oil Shale Division:

WHEREAS, It is the desire of the Oil Shale Section of the American Mining Congress, that the development of the oil shale industry be undertaken along lines which will merit the confidence and respect of the country at large; and

WHEREAS, The development of said industry will depend in a large degree upon the acquisition and maintenance of unquestionable titles to oil shale lands, and second, upon the solution of the problems connected with the mining and re-torting of the shale and the refining and marketing of the products derived therefrom; and

WHEREAS, The most economical and substantial development will be had through cooperation and research in connection with the fundamental problems of the industry; and

WHEREAS, Fake promotion schemes have been and will continue to be a menace to the oil shale industry if permitted to exist; and

WHEREAS, The Government of the United States can substantially aid in the solution of the various problems involved in the development of the oil shale industry; now, therefore, be it

RESOLVED, First: That the various owners and holders of oil shale placer locations be advised to maintain and perfect their titles to the lands included in their said locations.

Second: That the Department of the Interior be urged to define specifically what character of labor and improvements shall be acceptable as annual labor, and that the department in specifying such annual labor so define it that the work to be done will be of substantial value in the development of the property.

Third: That the federal government be urged to provide funds which will permit the Bureau of Mines and the Geological Survey to continue and expand their research work in connection with oil shales which is so vital and necessary to the progress of the industry.

Fourth: That the federal government provide funds sufficient to permit the General Land Office to re-survey those townships in the oil shale area for which the surveys are incomplete or confusing.

Fifth: That all members of the Oil-Shale Section, and all others interested in the welfare of oil-shale, be urged to use every effort to prevent the promotion of fake oil-shale schemes by reporting all organizations of any kind entering the oil shale field to the promotions investigating committee, and to assist in the prosecution of persons violating the laws and to furnish all possible data to those authorities charged with the prosecution of such cases.

The convention pledged the American Mining Congress to lend the best of its abilities in assisting the congressional coal fact-finding commission. An adopted resolution directed that a committee consisting of seven members of the Mining Congress be appointed to tender its best services to the fact-finding agency and to the coal industry "in presenting such information to the commission as will aid it in making recommendations that tend to stabilize the industry and safeguard the rights of the public." The resolution follows:

COAL FACT-FINDING

Resolution No. 7, by the Resolutions Committee:

WHEREAS, This convention of the American Mining Congress has received from Secretary of Commerce Hoover a telegram stating that a commission has been provided by the Congress of the United States to give consideration to the problem of the coal industry; and

WHEREAS, These problems involve the development and operation of the mines, the earnings of the mine workers, the investments and profits of the operators, the relations of employers and employes, and their joint responsibility to the public, the elimination of waste both in mining and marketing, the prevention

of strikes, sufficient transportation facilities and the question of over-development, the settlement of which problems are necessary to promote the best interests of the industry and to protect the rights of the public; and

WHEREAS, Proper solution of these problems is of vital interest to the entire mining industry, the transportation and industrial interests and the general public; therefore be it

RESOLVED, That the American Mining Congress, in recognition of this situation in the coal industry directs that a committee of seven members, representative of the entire mining industry, be appointed to tender its best services to both the congressional fact-finding commission and the coal industry in presenting such information to the commission as will aid it in making recommendations that tend to stabilize the industry and safeguard the rights of the public.

The convention directed that another committee be appointed to make an investigation of the labor shortage which is placing a handicap in the path along which the metal mining industry seeks to escape from the effects of the post-war depression. The following resolution, drafted by the western division of the organization, was adopted:

METAL MINE LABOR SHORTAGE

Resolution No. 9, introduced by Western Division:

WHEREAS, The basic industry of metal mining is suffering acutely from lack of man power, due, among other causes, to our present immigration restrictions, and as agriculture, building, manufacturing and other vital activities must also suffer wide-spread and continued depression unless metal mining is enabled to function properly; therefore be it

RESOLVED, That a committee be appointed at once to investigate the present labor shortage and report to the board of directors of the American Mining Congress, so that the board may provide for such action as shall afford relief.

With the expiration of the effectiveness of the Pittman act approaching, increased attention is being devoted to the silver situation, and it was for the purpose of aiding the mining industry directly through this study that the following resolution was adopted:

THE SILVER SITUATION

Resolution No 10, by A. G. Mackenzie:

RESOLVED, That a committee be appointed at once by the American Mining Congress to study the silver situation, and to recommend such constructive action by legislation or otherwise as will anticipate and provide for the condition in which the industry will be placed upon

the termination of purchases under the Pittman act.

Complicated conditions within the machinery under which the mining industry is taxed by the national and the individual states are on the increase. In the case of state levies especially, a great deal of the trouble is traceable to an obvious and deplorable lack of uniformity in systems of assessing the properties. In the following resolution, drafted by the tax conference at Cleveland, the generic idea for an organization which will seek to eliminate as much of the confusion as possible is contained:

THE TAX QUESTION

Resolution No. 11, presented by tax conference:

RESOLVED, That the report of the special committee on state taxation be accepted as read at this conference and that the thanks of the American Mining Congress be extended to the members of said committee and to those who cooperate with them; be it further

RESOLVED, That since it seems impossible to obtain uniformity in mine taxation until such time as the various states agree to uniformity in the principles of general property taxation, the subject of improvements in methods of local taxation of mines be referred to the tax committees of the several chapters of the American Mining Congress; be it further

RESOLVED, That subjects of general interest in mine taxation be referred to the Standing Tax Committee, with power to confer with and aid the tax committees of the several chapters; and be it further

RESOLVED, That a general tax committee be created to be composed of one member from each state, to cooperate with the Standing Tax Committee of the American Mining Congress on all matters of general interest in taxation. The members and officers of the Standing Tax Committee of the national organization shall be ex-officio members and officers of such general committee; and

RESOLVED, That the Board of Governors of the several divisions appoint, at this session or as soon thereafter as practicable, from each state within their jurisdiction one man to be a member of such general tax committee, and that where a state is beyond the jurisdiction of the boards of governors that the standing Tax Committee be authorized to select from each of such states one man to act on such general committee.

Continuing along the line of action dictated by evident necessity for relief of the mining industry from the constantly increasing burden of taxation, the convention adopted another tax resolution, originating with the tax conference, marking the increase of governmental expenditures out of all proportion to the

increases of population or wealth, and calling for the support of public men who devote themselves to the exercising of economies in the carrying on of the government's business. The text of this resolution follows:

LARGE GOVERNMENT EXPENDITURES

Resolution No. 12, introduced by tax conference:

WHEREAS, The amount of taxes to be imposed by federal, state and local governments is the direct result of the expenditures of such governments; and

WHEREAS, Such expenditures and the rates of taxation consequent thereon have been increasing throughout the country faster than population or wealth; and

WHEREAS, The economic welfare of the country requires a reduction in taxation which can only be effected by a reduction in governmental expenditures; therefore be it

RESOLVED, That this congress hereby voices its belief that the expenditures of our government can and should be materially reduced by eliminating all expenditures not actually necessary for the proper and efficient conduct of the government and by confining such expenditures as are necessary to the minimum called for by sound common sense and business principles; and be it further

RESOLVED, That this subject of reduced expenditures is of such vital importance that it demands prompt consideration and effective action by our legislators, our officials and our citizens; and be it further

RESOLVED, That this convention call upon the citizens of the country, whether or not members of this organization, to give definite thought and serious consideration to the means by which unwise, extravagant or unnecessary public expenditures can be restrained in their respective communities and states, as well as in the nation, and to give their active support and cooperation to these legislators, officials and other citizens who are striving to effect economies in government expenditures.

The plans and aims of the standardization movement, to which a separate division of the Mining Congress devotes its attention are outlined in this resolution received from the division by the convention and adopted in the general sessions:

THE STANDARDIZATION MOVEMENT

Resolution No. 14, introduced by Standardization Division:

WHEREAS, The enormous cost to the mining industry through unnecessary waste by present methods and practices can be greatly reduced by improved methods and practices; and

WHEREAS, The standardization of mining methods, practices and equipment will make possible greater efficiency and

cheaper production which are essential to our national growth; and

WHEREAS, Every mine operator and manager is studying diligently every possibility to reduce costs and save labor through the adoption of new forms of equipment; now, therefore, be it

RESOLVED, That the American Mining Congress strongly favors the continuation of the work of the Standardization Division and urges the adoption by the mining industry of the comprehensive and helpful recommendation already made by this division; and be it further

RESOLVED, That the thanks of the American Mining Congress be extended to the respective chairmen and personnel of their committees.

Gratitude of the mining industry to the Department of the Interior and to the War Minerals Relief Commission for the manner in which the amended act under which war minerals adjustments are made is being administered was expressed in the following language:

WAR MINERALS RELIEF

Resolution No. 15, introduced by M. B. Tomblin, of Colorado:

WHEREAS, The American Mining Congress has labored zealously for four years in behalf of justice on the part of the government toward those producers of war minerals, who under the urge and demand of the government, suffered heavy losses in the production of minerals for the needs of the nation in the prosecution of the war; and

WHEREAS, The Congress of the United States, in its passage of the amendment to the original War Minerals Relief act, and the Interior Department in the administration of the amended act have made it possible to do justice to those who suffered these grievous losses; therefore be it

RESOLVED, That the American Mining Congress, in twenty-fifth annual convention, extends its grateful appreciation to the Sixty-seventh Congress of the United States and especially to those members who worked with such full sympathy in this cause; and be it further

RESOLVED, That the American Mining Congress expresses its gratitude to the Department of the Interior, and to the War Minerals Relief Commission for the manner in which the amended act is being administered.

An adequate supply of power is one of the foremost needs of industry, and this power must be provided at a minimum of cost if industrial operations are to be attended by the fullest success. In the mining industry this condition is emphasized, and hearty endorsement of any sound economic policy under which cheap water power will be furnished the industry was

provided by the convention by its adoption of the following expression:

WATER POWER SUPPLY

Resolution No. 16, introduced by southern division, American Mining Congress:

WHEREAS, The basic need for the development of individual industry is an adequate supply of water, and increased transportation facilities; and

WHEREAS, There exist in the United States potential water powers in proximity to abundant supplies of raw materials, the development of which will facilitate transportation, and bring together, capital, transportation and power;

WHEREAS, These developments should go hand in hand; therefore be it

RESOLVED, That the American Mining Congress endorses the sound economic policy of the development of our water powers, under such provisions of general law as will prevent monopoly and insure adequate power to communities and industries which may be economically served therefrom and developed thereby.

The turmoil with which industry generally has been laden during recent years by reason of strikes and lock-outs, and the waste and loss which has towered high as a result, soon must be rendered impossible or all members of the economic eternal triangle—the public, capital and labor—will find themselves face to face with conditions bordering on the chaotic.

Restraints have been placed upon capital by law, holding that this factor of industrial operations cannot obstruct the production and distribution of the necessities of life. No similar restraint has been so solidly clamped upon labor.

Merely calling for an equal application of regulations in this respect, this resolution was passed by the convention:

STRIKES AND LOCK-OUTS

Resolution No. 20 (substitute for No. 8, by C. E. Maurer):

WHEREAS, The right to live is the privilege of every law-abiding American citizen; and

WHEREAS, This right of late has been seriously threatened by the assumption of labor organizations in arrogating unto themselves the destiny of human existence by forcibly obstructing the production and distribution of basic necessities; therefore be it

RESOLVED, That this congress in no equivocal language expresses its belief that strikes or lock-outs in essential industries should be impossible as they are destructive to the life of the commonwealth; and be it further

RESOLVED, that laws should be made and enforced by all the power of the government that shall forever strip labor organizations as well as employers of the ability to interfere with the production

and distribution of the necessities of life.

Resolutions on the following subjects also were passed by the convention:

Expression of approval and appreciation of the acts and proceedings of officers, directors and committees of the American Mining Congress during the past year.

Appreciation of the part played by Cleveland newspapers in rendering the convention a complete success.

Appreciation of the courtesies and services extended the convention and its delegates by the City of Cleveland and its people, and especially of the cordial cooperation of the Cleveland Committee on arrangements and of the Cleveland Exposition Committee.

“LIVING WAGE” FORMS A PHANTOM STANDARD

THE “LIVING WAGE,” in defense of which labor leaders through all these post-war days have been delivering many words, is rather an indefinite term after all, according to the opinion reached by the Railroad Labor Board, which came to the end of its studies of this subject by declaring the futility of efforts to set a definite standard of this type. With this self-same “living wage” scheduled for discussion by the President’s coal commission, much general interest is attached to the findings of the rail board.

Primarily the board attacks the theory of the “living wage” as a basis for determination of wages, declaring that if it were carried through the railroad industry to its legitimate conclusion and extended to other industries, it would wreck the roads and carry the business of the country into communistic ruin. The board brands the “living wage” term as a “bit of mellifluous phraseology calculated to deceive the unthinking.”

The decision declares that the “abstract illusive thing called the living wage is based on makeshift and a guess, is utterly impracticable and is not just and reasonable.” The Board says it is not wise and practical to undertake to establish an arbitrary standard of living for several million people and does not think that the desires and requirements of all men are equal. It says that no committee of experts could set up an average living standard upon which a wage scale could be practically based. It points out that standards of living are gradually improving and that this movement should be continued along lines indicated by human progress, as it can not be realized hurriedly by artificial expedients. The board says the establishment of a living wage would be a quick method of securing government ownership, as the public would pay for increased wages.

A MONARCH IN THE REALM OF EXPOSITIONS

Display of Mining Machinery at Cleveland the Most Comprehensive in History of Industry—Exhibits Run Gamut from Giants of Locomotive World To Tiny Ball Bearings—Presented in Beautiful Hall of Huge Proportions

TO SEE and to know—these were the promptings that brought thousands to the National Exposition of Mines and Mining Equipment held at Cleveland in connection with the Twenty-fifth Annual Convention of the American Mining Congress. One hundred fifty manufacturers of mining equipment displayed their wares, massive for the most part, and many educational exhibits were arranged in highly attractive presentations.

The exposition, which is an annual institution held in connection with each convention of the American Mining Congress, had just title to the claim of "the most attractive industrial show ever held in this country." Every piece of machinery used in mining operations was presented for inspection. Exhibits ran the gamut from ponderous mine locomotives to minute ball bearings. Figures compiled shortly after the exposition opened gave the combined weight of the exhibits as 250,000 pounds, according to John E. Miller, superintendent of the exposition.

In all probability this figure never has been surpassed at any industrial show, with the exception of world's fair presentations. Authorities agreed that the exposition was most comprehensive.

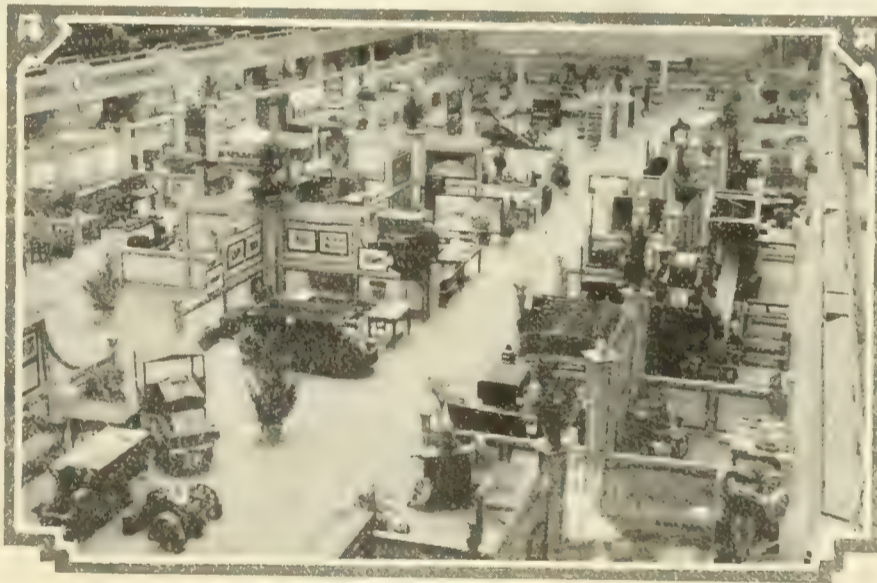
The exposition was staged on the two floors of the newly-completed Public Auditorium, the lighter machinery and educational displays being shown on the main arena floor, while the massive operating machinery was placed on the Machinery Floor below.

The immense amount of floor space and the striking beauty of the hall were responsible in large degree for an attractiveness not ordinarily found in industrial shows. The arrangement of the main arena hall was particularly im-

pressive. Running the length of the massive building, aisles of booths stretched almost three hundred feet from the points where they met the stage at one end of the hall. Partitions between the various spaces were formed by ivory panels bordered with gold and silver and



These two views show a part of the exhibits by mining machinery manufacturers and others and indicate exhibits and the vast proportions of the Cleveland Public Hall in which the National Exposition of Mines and Mining Equipment was held.



so arranged as to form a broad court in the center. The wall effect was topped with alternated golden-bronze eagles, perched on silver globes, and potted evergreens, thus creating a panorama that was rich and effective.

NO EXPENSE SPARED

With all its beauty, the hall did not outdo the individual exhibits, no expense having been spared by the participating companies to add every possible touch of attractiveness to their presentations. Resourcefulness and originality were so generally and obviously marshalled into the designing of the various displays that all seemed to join in creating an atmosphere of these two qualities.

Heavy underground transportation equipment was mounted on endless treads. Bearings were exhibited with such delicate adjustment that perpetual motion seemed to have been achieved.

The exhibitors' smoker, held on the third night of the exposition, filled four hours with entertainment and an opportunity for promotion of closer acquaintanceship and contact between those in charge of the booths and their guests, numbering nearly one thousand. A spirit of camaraderie pervaded the vast hall set apart for the event, as vaudeville artists and other entertainers held forth upon the long run-way that was stretched two hundred feet in the center of the scores of tables.

MINERS' QUARTETTE A FEATURE

"The Anthracite Quartette," from Scranton, Pa., composed of miners working for the Hudson Coal Company, were the feature of the smoker. Having ap-

peared at the smoker held in connection with last year's exposition at Chicago, they were prime favorites before their well-trained vocal chords sent the harmonies of their first number into the ears of an audience that swung its applause into terms of bedlam. The quartette is composed of Jenkin Jones, George Weaver, Joe Wetter and Martin Size,

with Howard White as accompanist on the piano.

The quartette attracted throngs of admirers throughout the duration of the exposition, presenting concerts each day, with the mounting of the Hudson Coal Company's exhibit as their stage.

This company presented one of the largest features of the show in the working model of its famous Loree breaker, declared by many to be the most pretentious industrial exhibit ever shown in this country. So large is this model that every detail in the handling of coal as it comes from the mouth of the shaft until it is loaded into freight cars can be followed as the miniature mechanical devices perform their functions in ex-



actly the same manner as those of the original of the model, located at Plymouth, Pa., which stands as the largest breaker in the world.

The aisles of the exposition floors were crowded throughout the entire week, the

interest of delegates to the convention and mining men generally accounting for the presence of vast portions of the throngs, while hundreds came as lay spectators to gain a closer insight into the operations of the mining industry

than any they could ever gain through any other means.

Reports read before the convention, placing emphasis upon the saving of miners' lives accomplished through the work of the Bureau of Mines, caused in-

creased attention to center upon the bureau's display at the exposition, where all the latest types of breathing apparatus and other safety devices were placed for inspection. The exhibit was in charge of A. A. Munch, of the Bureau's staff.

The Department of Commerce occupied a booth in a prominent position, where that agency's representatives outlined to mining men the part which the government is anxious to play in aiding them to secure the greatest possible benefit from its services. The hand which the Bureau of Foreign and Domestic Commerce offers to help industry reach its maximum prosperity was extended by the government's representatives to the operators, many immediately taking advantage of the opportunity to apply this service to their selling operations and exploitation plans.

Of interest to all, and especially students of economics who are following development of natural resources in relation to the effect upon the powers of industries and nations, was the oil shale exhibit of the Colorado School of Mines, in charge of Dr. W. V. Norris. This exhibit displayed oil shale distillation apparatus, shale samples, views, maps and publications of the school.

The list of exhibits included mine cars of many different types, electric trucks, conveyor arrangements, blowers that are reversible as intake or exhaust, belting and drills of various sizes, mine pumps, oils and chemicals utilized by the industry, dozens of devices calculated to insure safety, many periodicals devoted to mining, and a multitude of other subjects.

Extensive plans which had been laid

U. S. SUPREME COURT DECISIONS

THE SUPREME Court affirmed the decision of the lower court which decided against the Corona Coal Company in its suit against the Southern Railroad, alleging unreasonable distribution of cars to mines.

The motion of L. Vogelstein & Company to remand to the Court of Claims its claim against the government for increased copper prices above those paid by the government during the war, for further findings of fact, was postponed until the case is heard on its merits. In opposing the company's request to remand, the government says it is an attempt to require the Court of Claims to determine matters of law and to find facts which are not material.

The court recessed until November 13, when arguments will be heard in the cases involving the constitutionality of laws of Pennsylvania imposing a tax on anthracite coal and forbidding mining which affects surface buildings.

by the Mexican Government for an exhibit of large proportions depicting that country's mineral resources and industry were upset when the yellow fever quarantine prevented the personnel in charge and the Police Band, which was to have

accompanied the exhibit, from leaving the Mexican port. A representative of the Mexican Government's consular staff was present during the course of the exposition, however, and familiarized many interested delegates with details of the mining industry of this country.

DESCRIPTIONS OF INDIVIDUAL EXHIBITS

The Aldrich Pump Company, Allentown, Pa.—Two Triplex pumps especially adapted for mine service and a number of accessories, including porcelain plungers, pipe fittings, etc., were exhibited by this company, with J. E. Holveck as representative.

Allis-Chalmers Manufacturing Company, Milwaukee, Wis.—A reception room with photographs and publications illustrating mining, metallurgical, and other lines of power, electrical and industrial machinery was presented as this firm's exhibit, the representative being L. W. Grothaus.

The American Blower Company, Detroit, Mich.—"Siroco" centrifugal mine fans and the Ventura disc mine fan were the features of this display, in charge of K. E. West. Types of the booster fan and air-washer and humidifier also were shown.

American Brake Shoe and Foundry Company, New York.—This firm's space on the exhibition floor was devoted to an interesting exhibit of brake shoes and brake heads for mines locomotives. J. K. Godby was the representative.

American Mine Door Company, Canton, O.—An automatic mine door, automatic switch throwers, cable splicers and bond terminals comprised the exhibit of this company, which was in charge of Charles Vignos, Jr.

American Steel and Wire Company, Chicago.—The wide range of wire and steel products manufactured by this firm was drawn upon to furnish samples comprising one of the most interesting exhibits at the exposition.

Atlas Car & Manufacturing Company, Cleveland, O.—The exhibit of this company consisted of trolley locomotives and storage battery locomotives, operations being explained by the company's representatives to show elimination by a drive with ball bearing mountings of heavy frictional losses.

Austin Powder Company, Cleveland, O.—This firm exhibited a complete showing of samples covering its line of explosives used in mining operations.

Automatic Reclosing Circuit Breaker Co., Columbus, O.—Automatic reclosing circuit breakers in operation formed the feature of this exhibit, showing also No-Arc drum controller equipment, automatic motor starter, bearing thermostat

relays, time limit overload relays, and automatic reclosing battery charging switches. C. M. Huhle was in charge of the display.

C. O. Bartlett and Snow Company, Cleveland, O.—Photographs principally of coal tippie equipment, drying equipment, and conveying and elevating equipment featured this exhibit, with S. Gertz designated as the company's representative.

Bethlehem Steel Company, Bethlehem, Pa.—This exhibit was composed of various types of switches, switch stands and frogs. J. R. Ulrich handled the exhibit.

The Black Diamond, Chicago.—An information booth was maintained by the publishers of this periodical.

Bock Roller Bearing Company, Toledo, O.—This exhibit was devoted to a display of roller bearings for mine cars.

Bristol Company, Waterbury, Conn.—This firm exhibited recording instruments, belt fasteners and safety set screws. B. J. Klein was in charge of the exhibit.

Brown Hoisting Machinery Company, Cleveland, O.—Photos of conveyor equipment, locomotive and bridge cranes, and buckets manufactured by this company were displayed, with G. F. Climo in charge of the booth.

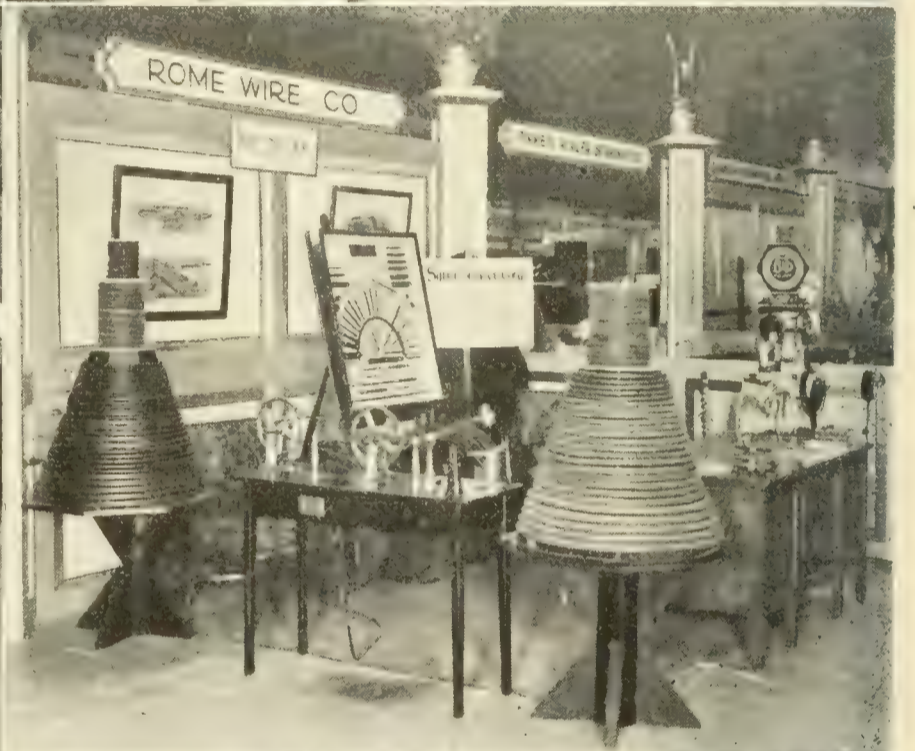
Buckeye Blower Company, Columbus, O.—The latest developments in types of mine ventilating fans and blowers were exhibited with W. I. Lawson in charge.

Buckeye Welding and Supply Company, Cleveland, O. This company exhibited welding devices of its manufacture.

Carnegie Steel Co., Pittsburgh, Pa.—This company had an interesting exhibit of rails and mine-track equipment, indicating the constructive development work which this company is doing in assisting in obtaining a greater degree of standardization in track equipment for mines. R. L. Twitchell had charge of the display.

The Cleveland Commercial, Cleveland, O.—Eyes which had been uninitiated into the mysteries of the making of a newspaper rested their gaze throughout the entire week upon this exhibit, which presented the various mechanical processes and equipment.

Edmond D. Christman, Massillon, O.—



Mr. Christman had interesting working models of oil-drilling equipment.

Clinton Refrigerating Company, Clinton, Ia.—Mechanical refrigerating equip-

ment in operation was shown by this company, which was viewed by all with great interest because of the novel character of the display.

Cleveland Rock Drill Company, Cleveland, O.—George H. Hall, secretary and sales manager, was in charge of this display of rock drills, couplings, valves and

air hose, forming one of the most interesting exhibits on the floor.

Coal Age, New York—A reception room for friends and a representative display of this well-known trade publication was maintained by its publishers. H. W. Clarke had charge of the display.

Coal Industry, Pittsburgh, Pa.—This monthly periodical distributed copies of its recent issues to visitors at its booth on the Machinery Hall floor.

The Coal Mine Management, Chicago.—“Coal Mine Management,” a monthly periodical, had on display copies of this publication. J. H. Burton and Frank J. Foley were in charge of the booth.

Colorado State School of Mines, Golden, Colo.—Dr. W. V. Norris was in charge of an interesting display of oil shale distillation apparatus, oil shale samples, views, maps and publications of the school. This exhibit attracted special attention by virtue of the oil shale conference held in connection with the convention of the American Mining Congress.

Conneaut Shovel Company, Conneaut, O.—C. J. Welsh and others demonstrated this company's stock of shovels, scoops, spades, drain and ditching tools throughout the week.

Deming Pump Company, Salem, O.—This company displayed a well-selected line of pumps and pump equipment, which was representative of the important work which this company has done in the development of mine pumping. Andrew Stewart and H. E. Stiver were in charge of the exhibit.

The Dictaphone Company, Cleveland, O.—This company, with its keen eye for advertising values, occupied a booth on the Arena floor and furnished free dictaphone service to all of the delegates who desired to use it. This was one of the busiest booths on the Exposition floor.

Dravo-Doyle Company, Pittsburgh, Pa.—Demonstrations of the Austin mine pump and Cleveland worm gear attracted many to this exhibit, which was in charge of W. R. Fitch.

E. I. Du Pont de Nemours & Co., Wilmington, Del.—This exhibit was comprised of cabinets containing blasting accessories, ingredients for manufactures of various explosives, display of photographs of powder mills, containers of products, appropriate advertising material, and an exhibit of Ventube—a tubing for ventilating mines.

Duro Metal Products Company, Chicago.—This company, manufacturing safety equipment, displayed an exhibit of unusual interest, containing a wide range of types of apparatus designed for protection of miners' lives.

Easton Car and Construction Company, New York.—Mine cars developed along

the special lines adopted by this company formed the subject of its exhibit.

Edison Storage Battery Company, Orange, N. J.—Emphasis was laid by this exhibit upon the durability inspired by the quality of Edison storage batteries, of which a full line was displayed. The exhibit also included a showing of Edison storage batteries for storage battery locomotives and Edison electric safety mine lamps.

Electric Railway Improvement Company, Cleveland, O.—Rail bonds and arc bond weldings were demonstrated in this exhibit. Erico arc weld rail bonds, Erico portable welding machines and a complete showing of equipment for this work were included. Representatives of the company demonstrated correct procedure for this type of work.

Electric Storage Battery Company, Philadelphia, Pa.—Exide ironclad batteries for service in storage battery mine locomotives and industrial trucks and locomotives were displayed. H. F. Sauer, W. VanC. Brandt, W. M. Ely and Edward Herring were listed as the company's representatives.

Electric Vacuum Cleaner Company, Inc., Cleveland, O.—The article on display by this firm was the Premier Handy, a vacuum cleaner, which can be used either as a suction machine or as a blower for removing dust and dirt from electrical mining machinery. The booth was in charge of H. R. Lipps.

Elliott Electric Company, Cleveland, O.—This company displayed a full line of electrical supplies and maintained a reception room for their many friends and clients who visited Cleveland during the week.

Fate-Root-Heath Company, Plymouth, O.—Two gasoline locomotives of 4 and 7 tons were displayed by this company, the exhibit being in charge of H. R. Sykes, W. O. Ritter and G. G. Stein, who emphasized the increasing popularity of the gasoline locomotive for both outside and inside mine hauls.

Federal Electric Company, Chicago.—The following products were exhibited by this company; Federal-National cartridges removable fuses, Federal time limit fuse plug, Federal electric sirens, Federal electric lanterns, Federal electric miners' storage battery lanterns, and Federal miniature signs. E. L. Ogle and R. G. Pilkington were in charge of the display.

J. R. Fleming & Son, Inc., Scranton, Pa.—Fleming-Hyatt roller bearing journal box trucks, Fleming self-aligning journal boxes, roller bearing and plain bearing type and various steel castings used in mine car construction formed this firm's exhibit.

Flexible Steel Lacing Company, Chicago.—An interesting presentation of

alligator steel belt lacing and conveyor belting formed a part of this exhibit, which also displayed High Duty belt fasteners for heavy conveyor work, samples of this joint in multi-ply structure attracting much attention. Flexco-Lok expanded steel guards for electric lamps also were displayed. H. L. Coats had charge of the exhibit.

Fulton Pit Car Company, Canal Fulton, O.—Types of wooden and steel cars manufactured by this company which are in general use throughout the country were on display. In charge of the exhibit was J. V. Dugan, H. N. Myers, C. A. Gainey and J. V. Dugan, Jr.

H. D. Ganung, Syracuse, N. Y.

General Electric Company, Schenectady, N. Y.—This exhibit showed a 6 ton cable reel mining locomotive in operation. An automatic reclosing circuit breaker and various line material also were displayed, with C. T. McLaughlin in charge of the booth.

General Motors Truck Company, Pontiac, Mich.—Terming its product as “The World's Finest Motor Trucks,” this company featured the latest developments in motor design, namely, the new G. M. C. removable cylinder sleeve motor and two-range transmission.

Goodman Manufacturing Company, Chicago.—Photographs of mining machines and locomotives were used to portray unique details of this firm's products. Explanation of the traverse equalizer equipment of mine locomotives attracted special interest, indicating ability of the locomotive to travel over obstructions and depressions as though it were running on a smooth track. A model 20-ton locomotive with improved equalizer bar and the improved Goodman coal cutter chain was featured. A. F. Hughes was in the booth.

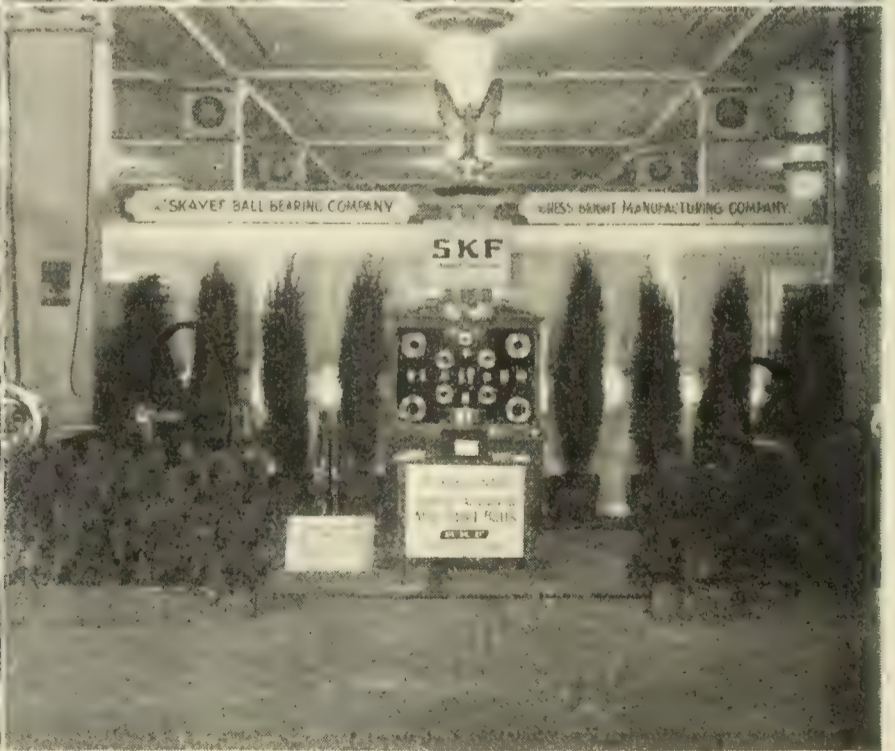
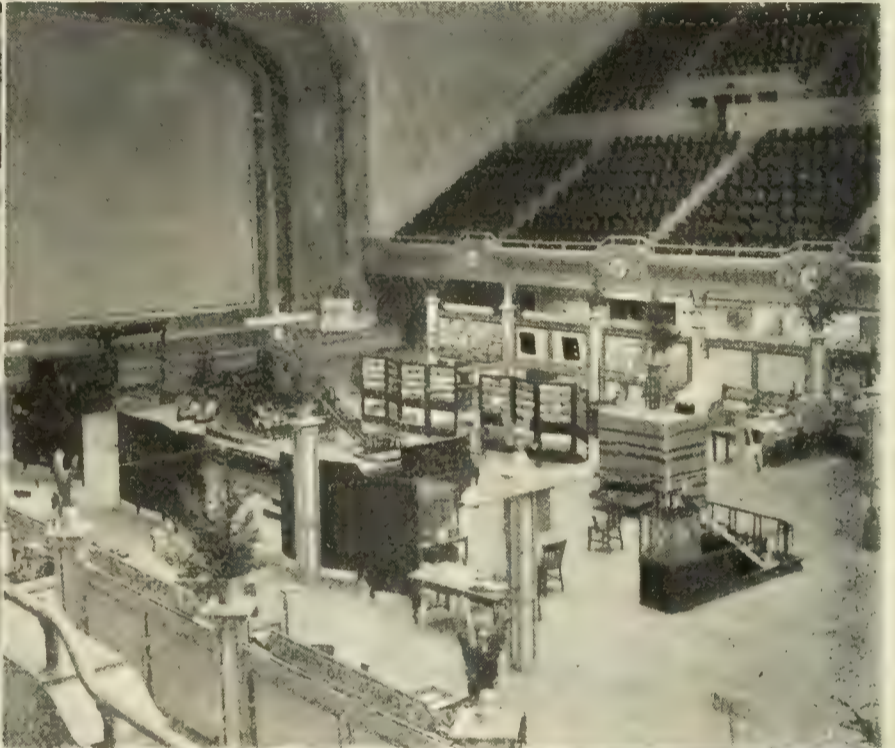
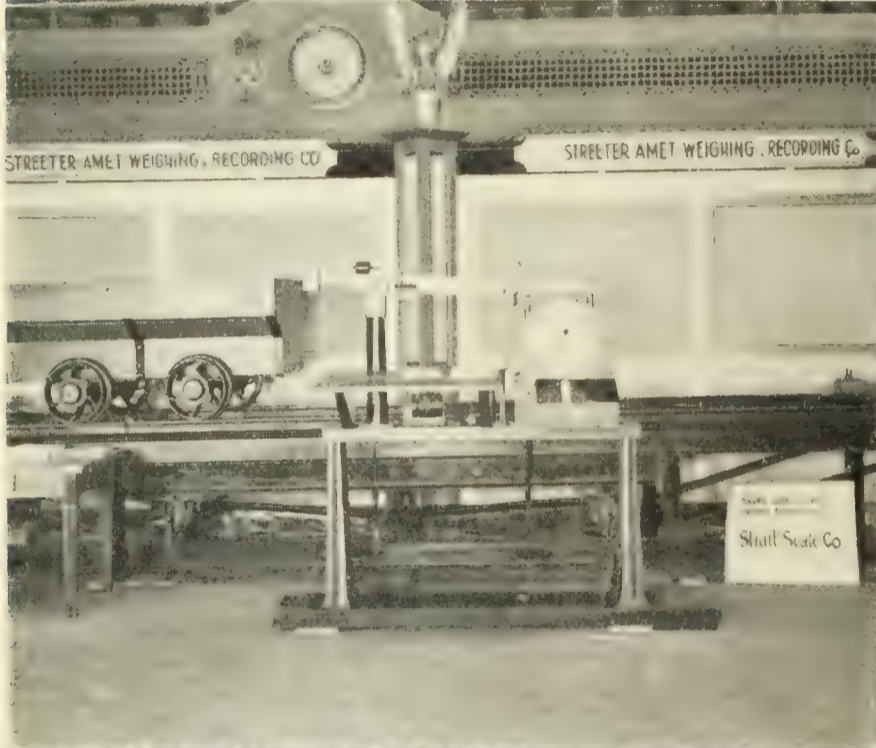
B. F. Goodrich Rubber Company, Akron, O.—This exhibit consisted of a display of a roll of “Long-life” rubber belting for power transmission purposes and 60 pieces of other mechanical rubber equipment. H. B. Houston and J. B. McPherson were in charge.

Gurney Ball Bearing Company, Jamestown, N. Y.—A wide variety of ball bearings was displayed by this company, with F. R. Wren and O. H. Koelker in charge of the exhibit.

Hadfield-Penfield Steel Co., Bucyrus, O.—Manganese steel parts for mine equipment were on display in this booth and were demonstrated by E. N. Whitcraft.

Hazard Manufacturing Company, Hazleton, Pa.—Samples of all sizes and types of wire rope and insulated wire manufactured by this company were exhibited, explanation of the materials entering into this manufacture lending an educational tone. T. A. Keefe was in charge.

Hercules Powder Company, Wilming-



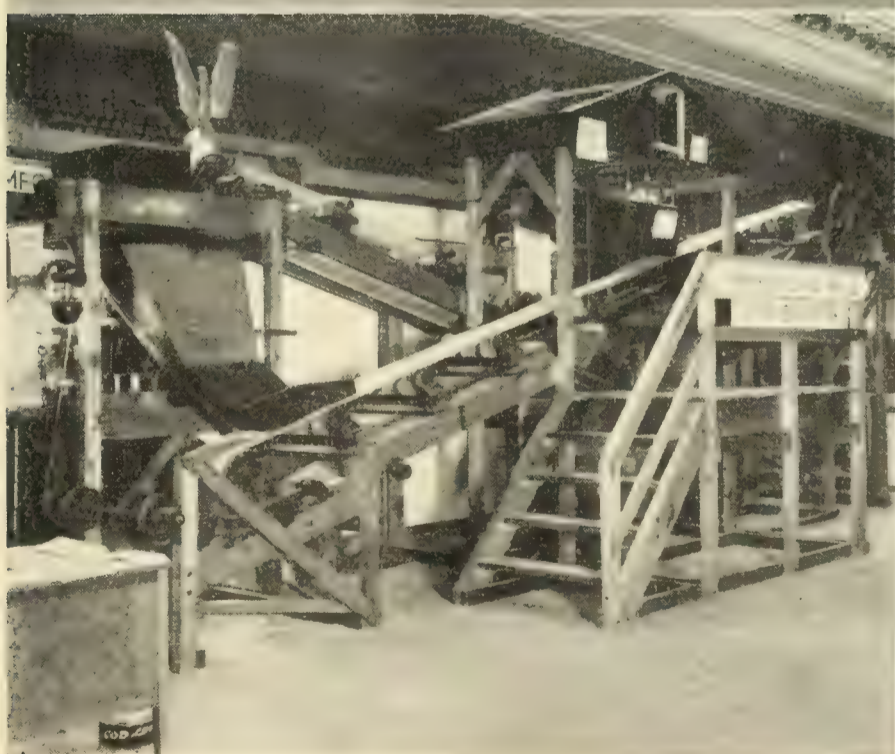
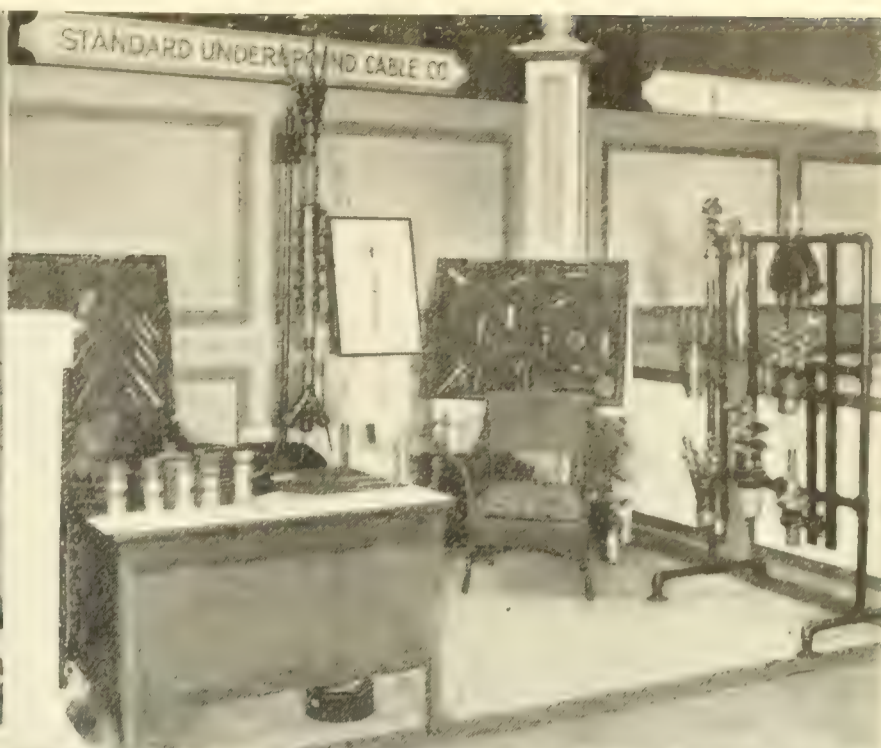
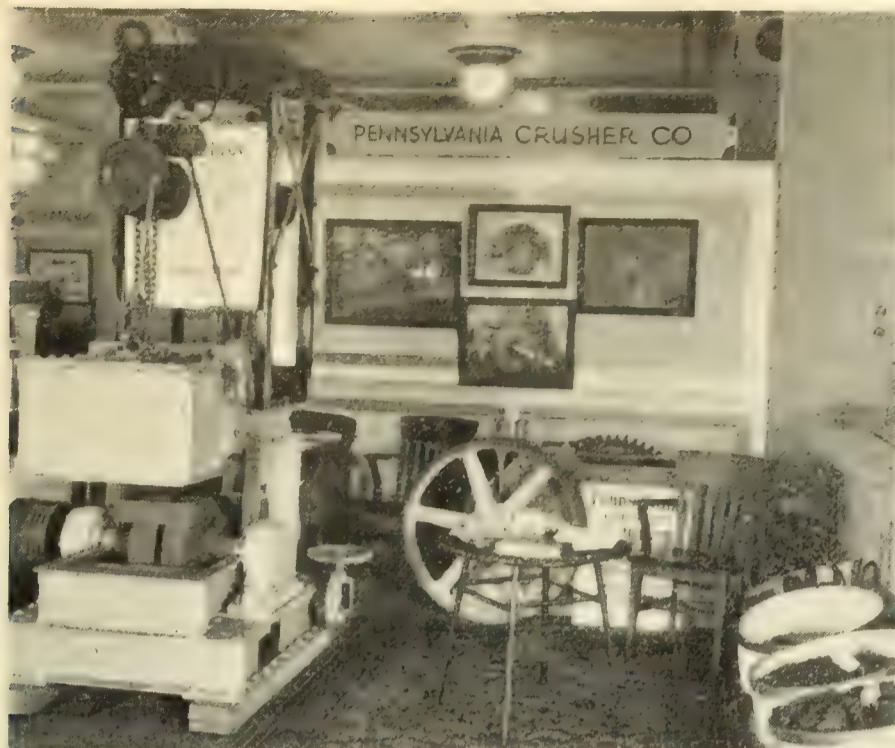
ton, Del.—An exhibit of blasting supplies and flotation oils was presented by this company with M. S. Greensfelder in charge of the display.

Hill Clutch Co., Cleveland, Ohio.—A

display consisting of operating units of the Hill Clutch used in power plants and factories to join up and separate sections of the power transmission,

thereby securing greater economy in the power use.

Hochensmith Wheel & Mine Car Company, Penn Station, Pa.—This company



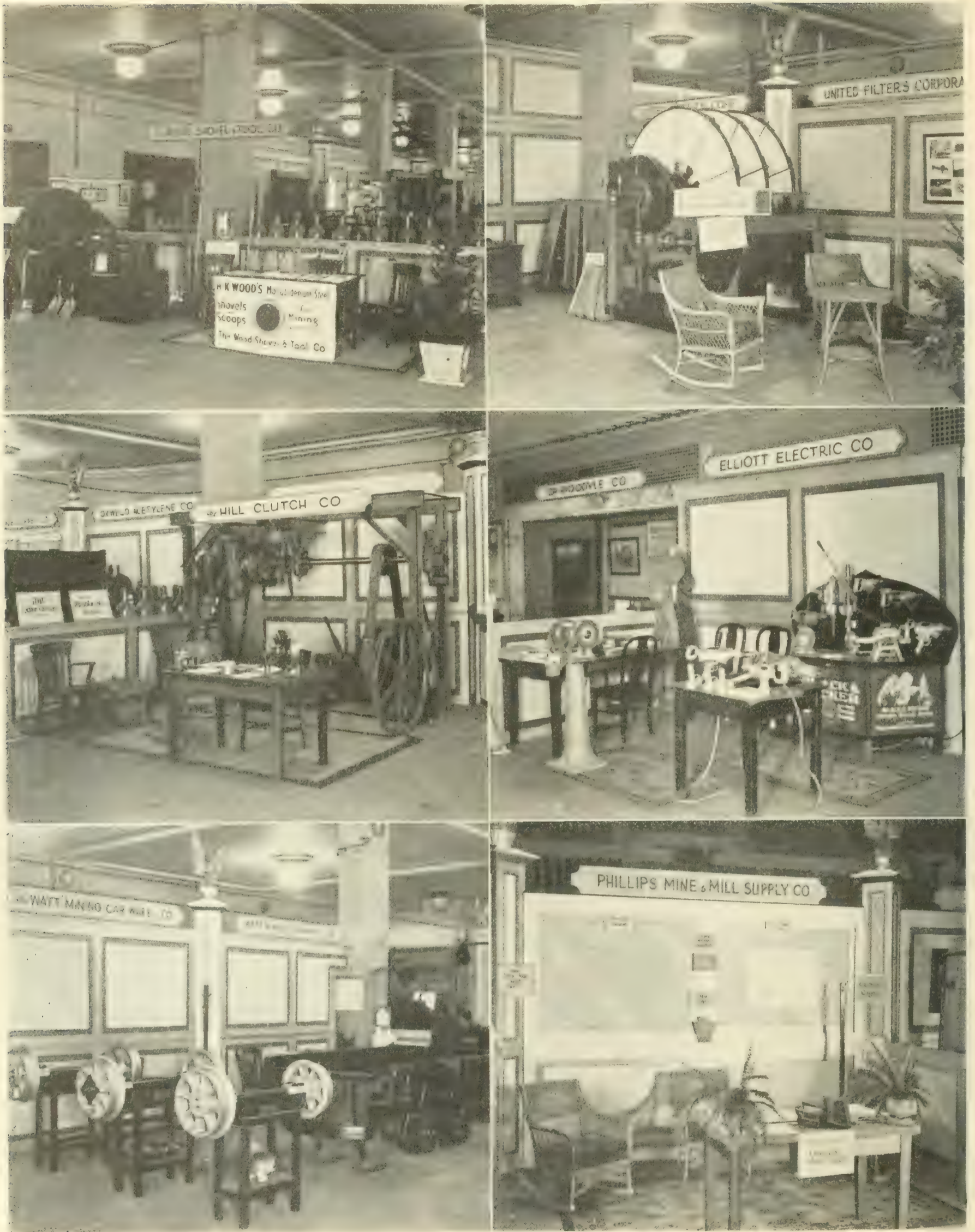
displayed mine cars and mine car wheels of its make.

Robt. Holmes & Brothers, Danville, Ill.—This exhibit was comprised of all steel cages, composite wood and steel

cages, a helical end-loader and automatic car lift, demonstrated by F. R. Holmes.

Hudson Coal Company, Scranton, Pa.—An outstanding feature of the exposition

was furnished by this company's working model of its famous Loree breaker. In addition to the models of the breakers, this company exhibited a cross-section of a model anthracite mine. Mr. John-



son and Mr. Van Epps had charge of the exhibit.

Hyatt Roller Bearing Company, New York.—This company had a beautiful exhibit of the roller bearings which have

displayed so important a part in the development of mine cars transportation. A large Hyatt bearing in a glass case demonstrated the new positive oiling features in this bearing and made an

extremely attractive display. H. K. Porter, directing mine car engineer of the Hyatt Company, was in charge of the exhibit.

The Ironsides Company, Columbus,

O.—The feature of this exhibit was a display of several gears owning a service record of 349,000 miles of continuous running, made possible, according to A. D. Richardson and Roy Baxter, the demonstrators, by use of the Ironsides gear lubricants, of which an interesting display was made.

Ironton Engine Co., Ironton, O.—Prominence in this exhibit was given to demonstration of a low type locomotive, charging switchboard panel, controller with parts, headlights and other accessories. A. Appleton and W. R. Youmans had charge of the booth.

Jacobsen & Schroeder, Inc., Chicago.—This company exhibited a complete line of mining machinery, including blowers and ventilators, coal tipples and handling plants, screening and storage plants, elevating and conveying plants, coal docks and screens.

Jeffrey Manufacturing Company, Columbus, O.—The feature of this display was a stereograph machine, which afforded clear conception of the operations of Jeffrey mining machinery.

Joyce-Cridland Company, Dayton, O.—The exhibit of the Joyce Cridland Co. consisted of a great variety of "jacks" used for all lifting purposes. This made a very complete display. H. E. Brock had charge of the exhibit.

Kenova Mine Car Company, Kenova, W. Va.—Mine cars, running gears, axles, wheels, etc., manufactured by this company formed the subjects of its exhibit.

Keystone Consolidated Publishing Company, Philadelphia, Pa.—R. C. Becker, vice-president of the company was among its representatives attending the convention. In the booth were copies of the last three editions of the company's publication "The Coal Catalogue," "The Mining Catalogue Coal Edition," and "The Mining Catalogue, Metal Edition," all recognized and quoted as standard authorities.

Keystone Lubricating Company, Philadelphia—This company occupied one of the most prominent spaces on the main arena floor with a very complete and attractive display of lubricating oils and greases used in mining enterprises. This exhibit was extremely successful and was under the direct charge of Geo. W. Hall. H. A. Busby, president of the company, was also in attendance.

Koehring Company, Milwaukee, Wis.—The principal subject exhibited by this company was a Koehring concrete mixer, photographs of other construction equipment of its manufacture also being shown.

Lake Superior Loader Co., Duluth, Minn.—The display consisted of a "Shoveloder" in action. The "Shoveloder" is a compressed air-shoveling machine used in mines for loading cars and

in tunnel work for mucking. H. E. Talboys was in charge of the display.

A. Leschen Rope Company, St. Louis, Mo.—Aerial tramway equipment and wire rope of various sizes were displayed by this company.

Link-Belt Company, Chicago.—This exhibit gave prominent display to a coal cutting chain with double-pointed bit and wedged grip.

Lorain Steel Company, Jamestown, Pa.—Two steel mine cars manufactured by this company were featured with mine car wheels, mine track work, machine bolts and drop forgings also forming a part of the display which was in charge of C. J. Hahn.

Ludlow-Saylor Wire Company, St. Louis, Mo.—This exhibit consisted of samples of all grades of woven wire cloth, double-crimped wire cloth and Rektang rolled slot screen. Frank B. Ungar was in charge.

Lunkheimer Company, Cincinnati, O.—This company's display of valves, lubricating specialties, and boiler trimmings was in charge of W. B. Meyers.

Mancha Storage Battery Locomotive Company, St. Louis, Mo.—The display consisted of the "Mancha Electric Mule," which attracted great interest. Raymond Mancha and W. F. Exner represented the company at Cleveland.

Marchant Calculating Machine Company, Oakland, Calif.—Calculating machines "used for anything mathematical" were displayed by this company, demonstrators being in the booth to explain added efficiencies to be gained through their operation. Mr. Justus represented the company.

Marietta Manufacturing Company, Point Pleasant, W. Va.—A working model of the McKinlay automatic coal mining and loading machine was displayed by this firm.

Merrick Scale Manufacturing Company, Passaic, N. J.—A device termed the "weightometer" which will weigh and record the weight of any material in transit over a belt, bucket, or pan conveyor, without interrupting the flow was exhibited by this company, the display consisting of a miniature working model, with F. P. Hambright and T. F. Corpron in charge.

Mine Safety Appliance Company, Pittsburgh, Pa.—The motto "Everything for mine and industrial safety," adopted by this company indicates the character of its exhibit. Display was given to new self-rescue masks and carbon monoxide masks, detectors and oxygen apparatus.

Mining Safety Device Company, Bowerston, O.—Two model feeders were displayed by this company. Mr. Nolan explained the mechanical operations of the apparatus.

Moloch Company, Kaukauna, Wis.—Dies and bits of various sizes used in

mining operations were displayed by this firm with George J. Hodapp in charge of the booth.

Morgan-Gardner Electric Company, Chicago.—This firm displayed photographs of mine locomotives and coal cutting machinery of its manufacture. George C. Warner was in charge of the exhibit.

Morse Chain Company, Ithaca, N. Y.—Display was given to samples of chain manufactured by this company and exhibits showing operation of 100-H. P. chain drive, showing rocker joint action. C. L. Saunders and E. T. Wheeler had charge of the display.

Myers-Whaley Company, Knoxville, Tenn.—Visitors to this booth were given a close insight of operating methods of this company's shoveling machines, illuminated photographs and complete blueprints forming the medium of display. William Whaley represented the company.

National Coal Association (Coal Review) Washington, D. C.—Copies of the special convention edition of "Coal Review" were distributed from this booth, having been rushed from the presses in Washington in record time.

National Refining Company, Cleveland, O.—The National Refining Company displayed a complete line of lubricating oils as well as its interesting and attractive advertising features which have done so much to popularize their trade mark "En-Ar-Co" in Cleveland and the surrounding territory.

New York Belting and Packing Company, New York.—This company's display consisted of samples of belting, hose and packing in various sizes. J. R. Lane was in charge of the exhibit.

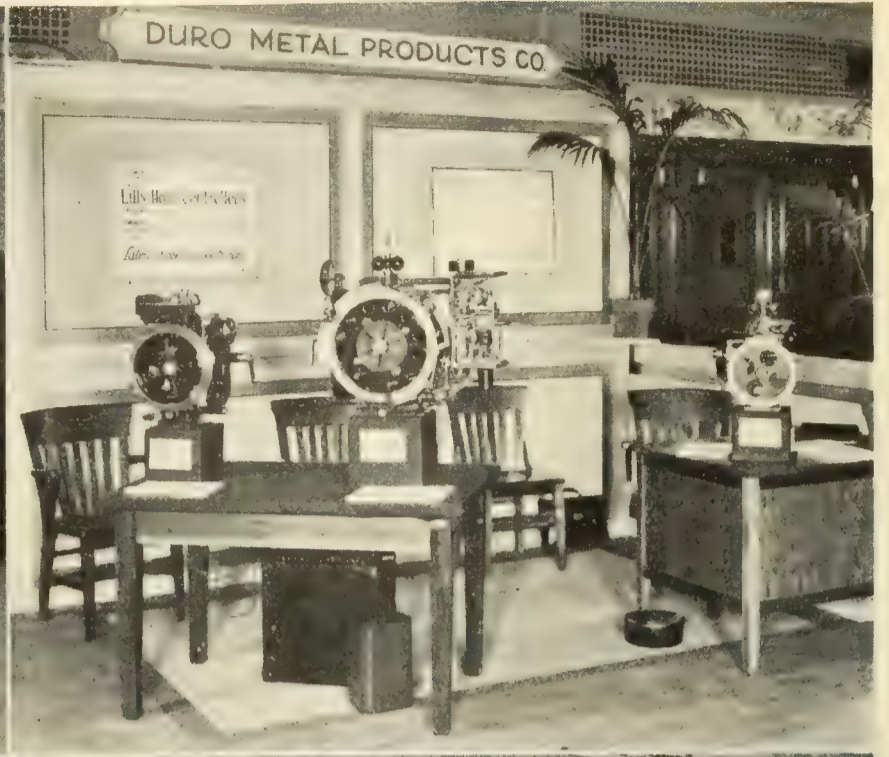
Norma Company of America, Long Island City, N. Y.—Open type ball bearings and thrust bearings were presented in this exhibit, which was in charge of Norman Bell.

Ohio Brass Company, Mansfield, O.—Line materials, insulators, rail bonds and a new light weight resistance arc-welder were exhibited by this company, with J. C. Wilson in charge of the booth.

Oster Manufacturing Company, Cleveland, O.—This display consisted of pipe threading tools, motor-driven pipe threadings and cutting-off machines.

Ottumwa Box Car Loader Company, Ottumwa, Ia.—This company displayed a small working model of its pusher type box car loader and a motion picture machine showing in actual operation at various coal mines, collieries, sulphur plants, etc., the company's different types of box car loaders and unloaders. Phillip B. Phillips had charge of the displays.

Oxweld Acetylene Co., Newark, N. J.—This company displayed a very complete exhibit of the manufacture of oxyacety-

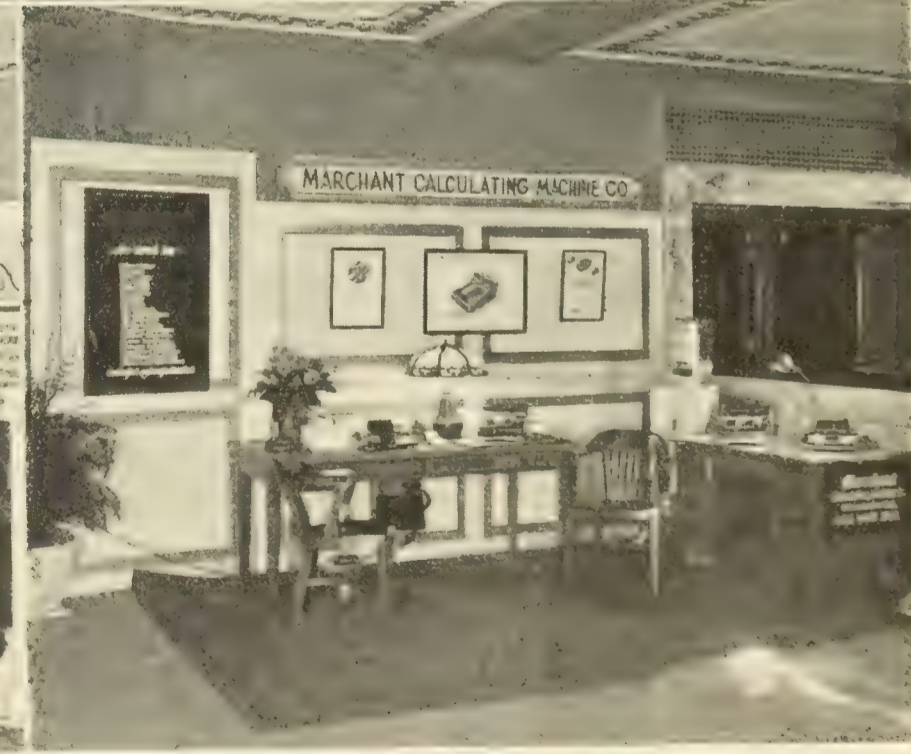
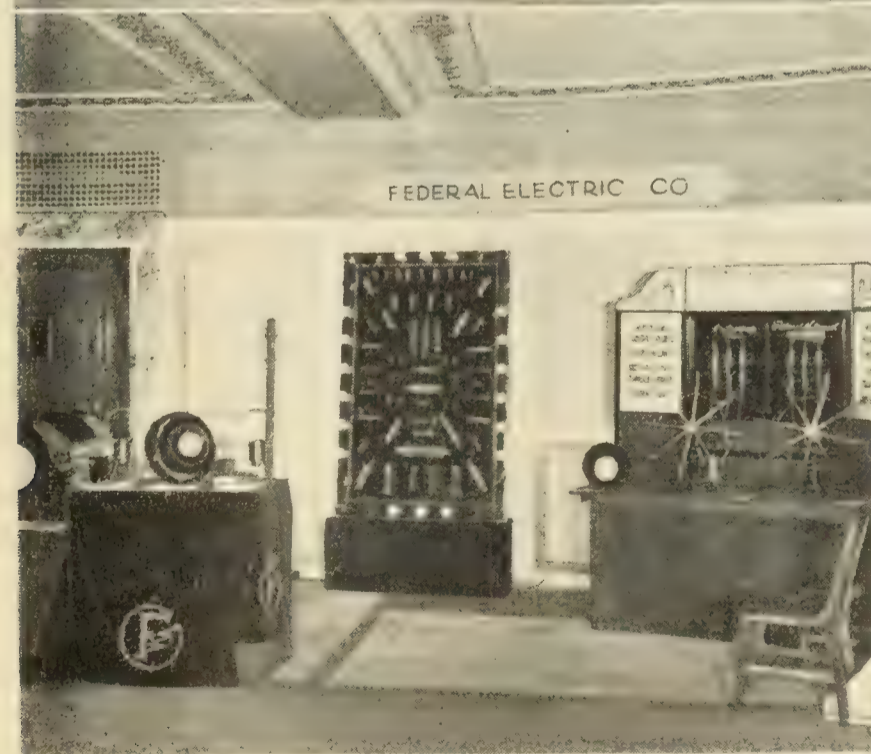
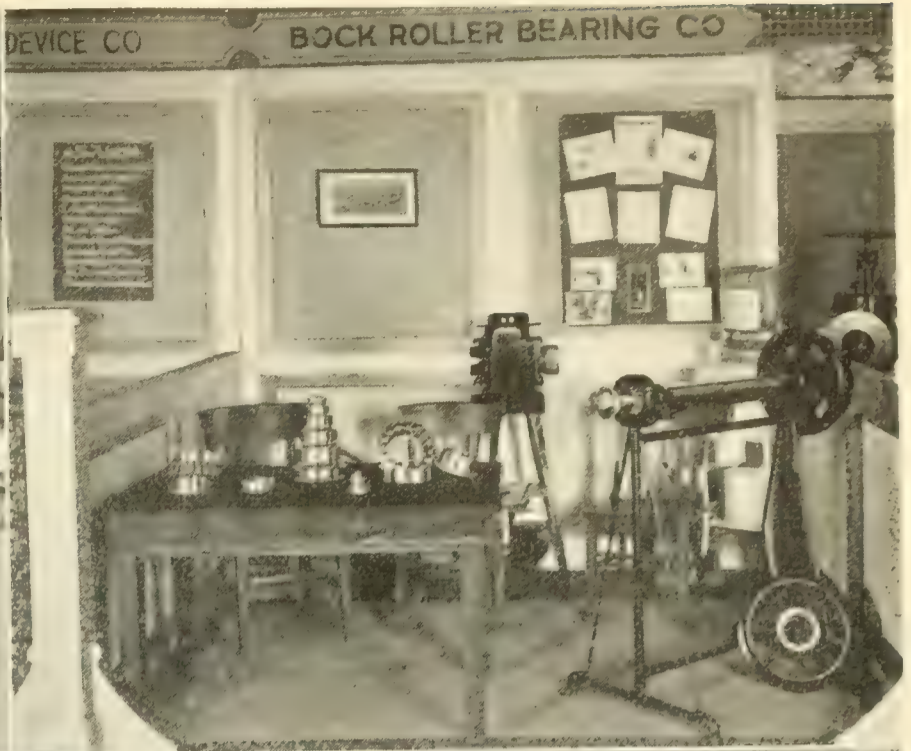


lene gas with containers, etc., and also a working exhibit of the use of oxyacetylene blowers in the cutting of steel and welding. It was one of the most success-

ful displays on the exposition floor. Pennsylvania Crusher Company, Philadelphia, Pa.—This company exhibited an all-steel single-roller crusher, an all-

steel hammer type pulverizer and a motor-driven chain block hoist, J. B. Clark being in charge of the display.

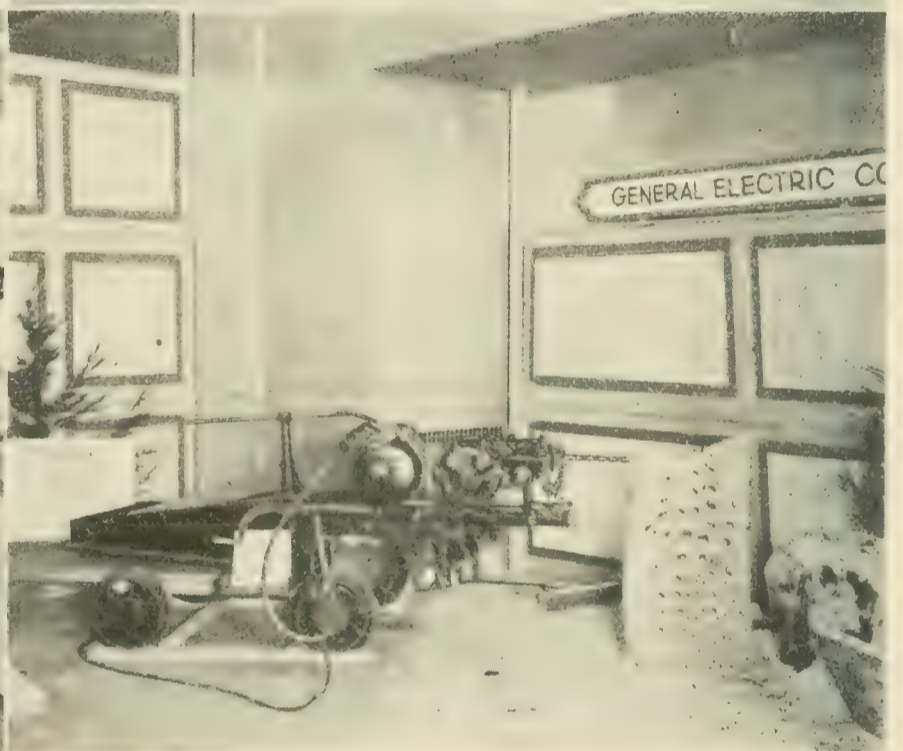
Philadelphia Storage Battery Com-



pany, Philadelphia, Pa.—Diamond grid batteries for all types of locomotives and mine uses were shown in this exhibit.

Phillips Mine & Mill Supply Company, Pittsburgh, Pa.—This company's mechanical experts explained to visitors the operation of its patent open cap

wheel truck, car stops and cagers, push-back dump, cross-over dump, gravity screening equipment, mine cars and patent mine-run weigh hopper.



Pittsburgh Machine Tool Company, Braddock, Pa.—This company exhibited Curtis patent rotary pumps for mine use.

cableway, and Mr. C. H. Burke represented the company.

Reading Steel Casting Company, Bridgeport, Conn.—Bronze and iron body

Pressed Steel Car Company, Pittsburgh, Pa.—This display consisted of mine cars and mine car equipment.

Railway and Industrial Engineering Company, Greensburg, Pa.—This company's exhibit consisted of a complete working model of the Harrington Rocking Cableway, which the company manufactured. Mr. N. T. Harrington, the inventor of this

valves, asbestos packed cocks, open hearth cast steel valves and fittings were displayed by this company.

Carl H. Reuter, Inc.—This company displayed its complete line "Brunsviga" calculating machines.

Roberts & Schaefer Company, Chicago.—This company exhibited a balanced Marcus screen and picking table in a miniature model. R. G. Lowrie was in charge of the exhibit.

Rock Products, Chicago.—This exhibit displayed collections of various non-metallic minerals and photographs depicting the mining and manufacturing of these materials.

John A. Roebling's Sons Company, Trenton, N. J.—This exhibit comprised samples of wire rope, cables and wire fittings of the company's manufacture, with J. C. DeGarmo in charge of the display.

Rome Wire Company, Rome, N. Y.—This company displayed a complete line of plain and insulated copper wires and cables, including Super-Service mining

and locomotive cables and cords. The exhibit was in charge of W. F. O'Brien.

Safety Equipment Service Company, St. Louis, Mo.—This display consisted of safety-first signs and slogans, safety clothing, safety bulletin boards, first-aid supplies and machine guards, with D. W. Nutt in charge.

Sanford-Day Iron Works, Knoxville, Tenn.—A working model of locomotive and drop-bottom mine cars was exhibited by this company. W. O. McKamey was in charge of the booth.

Simplex Wire and Cable Company, Chicago.—"Pirex" rubber armored mine cables, bore-hole cables, braided wires and cables for mine use were exhibited by this company.

S. K. F. Industries, New York.—This exhibit emphasized the perfect alignment and balance of a tiny bearing which was ejected into the air by a spring motor falling on a hardened anvil, and then rebounding for several moments without falling from the surface of the anvil. R. F. Byler was in charge.

Southern Wheel Company, St. Louis, Mo.—This exhibit comprised mine car trucks, wheels and cars, and was under the management of W. C. Doering.

Stafford Roller Bearing Truck Corporation.—This exhibit was of wide appeal, being of interest to transportation men as well as those engaged in inspection of mining equipment. It consisted of bearings similar to those placed under Michigan Central Railroad equipment which have been running in the original lubrication since 1920 and average a daily service of 183 miles.

Standard Oil Company of Ohio, Cleveland, O.—This company displayed a representative line of products.

Standard Underground Cable Company, Pittsburgh, Pa.—The exhibit of this company consisted of samples of electric wires and cables and cable accessories. Prominent in the exhibit was a miniature Borehole cable installation, the advantages of which were clearly demonstrated. A varied line of samples of rubber-insulated wires and cables and cable terminals was shown, the both being in charge of Mr. E. S. Simkins and Mr. J. J. Hohmann.

Standard Welding Company, Cleveland, O.—The Standard Welding Company presented a display of welding devices illustrating the methods which are now in such general use. B. H. Scott was in charge of the exhibit.

Stearns Conveyor Company, Cleveland, O.—The efficiency of modern conveyor methods as applied to mining operations was demonstrated in this company's exhibit of its product.

Streeter-Amet Weighing and Recording Company, Chicago.—A mine car in action was used to demonstrate the operation of an automatic weight recorder.

H. F. Reck was in charge of the booth.

Templeton-Kenly Company, Chicago.—This exhibit comprised Simplex mining and shoring jacks which are being used on mining machines, and also emergency track and car jacks, demonstrated for safety, efficiency and economy.

Timken Roller Bearing Company, Canton, O.—This company exhibited the Timken tapered roller bearing, showing this product's ability to take thrust and radio loads on the same bearing surface. The bearings were demonstrated in their application to mine cars, conveyors, mine locomotives and other mining equipment. E. R. Phillips was in charge of the exhibit.

W. S. Tyler Company, Cleveland, O.—Hum-Mer electric screens, Tyler laboratory equipment, the Rotap testing sieve-shaker, and wire cloth were exhibited by this firm, with A. E. Reed in charge of the exhibit.

United Filters Corporation, Hazleton, Pa.—This display consisted of a type 6-3 American continuous filter, motor-driven, specially designed for dewatering metallurgical slimes, concentrates, oil flotation concentrates, coal dust, and similar products. John T. Hoyt had charge of the display.

United Lead Company, New York. This display emphasized the use of lead-lined and lead-covered products for adding acid resisting qualities to bore hole stubs, flanged pipe, flanged fittings, valves, agitators, centrifugal pumps, etc. Brass, copper and tin linings and coverings and steel sheets. Mr. McElfish represented the company.

The Upson-Walton Company, Cleveland, O.—This company exhibited various wire rope fittings, pure Manila ropes, "U-W" plow steel hoisting cable, and other of the company's manufactures. The display was in charge of H. W. Lippert.

Watt Mining Car and Wheel Company, Barnesville, Ohio.—Mine cars, ore cars, trucks, wheels, etc., formed the subjects of this exhibit.

Weiman Pump Company, Columbus, O.—This exhibit consisted of a full ball bearing centrifugal pump, self-oiling geared mine pump, both assembled and dismantled, and a high-pressure multi-stage centrifugal. H. L. Buchanan supervised the display.

Wellman-Seaver-Morgan Company, Cleveland, O.—The feature of this exhibit was a Rollsrigh gravity tippie for mine cars. No power is required for operation of this tippie. This firm also displayed an engine for mine locomotive for general industrial use. E. R. Kenner was in charge.

Westinghouse Electric & Manufacturing Company, Cleveland, O.—This exhibit comprised locomotives, automatic switching, line material and lighting.

George D. Whitcomb Company, Rochelle, Ill.—This firm displayed a flame-proof storage battery locomotive and a gasoline locomotive. S. S. Swasey was in charge.

Wood Shovel and Tool Company, Piqua, O.—Shovels and scoops for mining purposes were exhibited by this company. A machine for testing the wear and strength of shovels also was known.

ACTION TAKEN ON WAR MINERALS CASES

THE WAR MINERALS Relief Commission has recently disposed of a large number of claims. In 43 cases, awards have been recommended which have been approved by the Secretary of the Interior. Awards in excess of \$1,000 have been allowed to the following:

J. C. Dick & Co., Salt Lake City; E. J. Emmons, Bakersfield, Calif.; T. T. Lane, San Francisco; Eureka Manganese Company, Cushman, Ark.; E. N. Fessier, Stockton, Calif.; Alexander Egenes, Greenwood, Calif.; W. H. Bemenderfer, Calientes, Calif.; T. E. Morton, Los Angeles; Roy Glasscock, Mt. Vernon, Ore.; C. E. Loofbourrow, Oakland, Calif.; W. J. Ohlheiser, S. J. Hawkins and B. B. Van Buren, Crescent City, Cal.; Chrome Mining Co., Philadelphia; Chestatee Pyrites and Chemical Corp., Atlanta; Philip Weissman, Lindsey, Calif.; Samuel Alshuler and W. F. B. Berger, San Francisco; Auburn Chrome Mines, Menlo Park, Calif.; Independence Mining Co., Batesville, Ark.; Tres Amigos Co., Los Angeles; Baker, Rostetter & Fippin, Callahan, Calif.; Ben and George Dickson, George Hunt and Jane Allen, Yreka, Calif.; White Horse Mine, Philipsburg, Mont.; W. C. Goss Manganese Co., Elizabethtown, Tenn.; Cuyuna-Minneapolis Iron Co., Ironton, Minn., and Sulphur Gulch Manganese Mine, San Francisco.

In 21 cases the commission has recommended awards which go before the Secretary for approval. Awards of above \$1,000 include the following: Veatch & Sullivan, Callahan, Calif.; and B. F. Clark, Yankee Hill, Calif.

The commission disallowed these claims: J. E. Prescott, Baker, Oregon; M. E. Ashby, Montrose, Calif.; Aguilera y Companie, Cuba; I. M. Cross, Ocean Beach, Calif.; C. L. Moody, De Norte, Calif.; Wm. Dawkins, Eureka, Calif.; J. H. Rogers, Gasquets, Calif.; J. R. Whitman, Atlanta; J. G. Murphy, Seattle; U. S.-Canadian Manganese Co., Trenton; Smith Bros., Taylorville, Calif.; I. D. Garinger, Daggett, Calif.; Merritt Development Co., Crow Wing County, Minnesota; J. A. Ross, Pleasant Grove, Calif., and J. J. Sweeney, San Francisco.

STANDARDIZATION STRENGTHENS NATION

Industrial Economy Campaign of Highest Value, Col. C. L'H. Ruggles Tells Convention—Reviews Standardization Experience of Army

EVIDENCE that industry may learn lessons of value from the history of standardization activities of the War Department during the



Col. C. L'H. Ruggles

early stages of the war was presented to the twenty-fifth annual convention of the American Mining Congress by Col. C. L'H. Ruggles, Ordnance Department, U. S. A.

So great are the wastes due to unnecessary duplication of effort and ma-

terial in industrial operations that economies which will result from the standardization movement going on are far greater than anyone realized when the campaign began, Col. Ruggles declared.

Delegates to the convention were gratified to see that the War Department is proving, by the success of its standardization efforts, the feasibility and comparatively immediate benefits which are to be gained by earnest application to the work.

Colonel Ruggles outlined these benefits as follows: Simplification of production and employment problems; reduction of selling costs; provision of a common language for buyer and seller; possibility of mass production; simplification of stock carrying; increased speed of delivery; reduction of prices; decrease in litigation and other factors tended to disorganize industry; elimination of indecision both of production and utilization by concentration on fewer lines; opportunity for more thought and energy to be put into designs so that they will be more efficient and economical by bringing out new considerations to determine what is best, and by securing agreement upon moot questions; stimulation to research and development; means of getting the results of research and development into actual use in industry; and elimination of practices which are merely the result of accident or tradition and which impede development.

Col. Ruggles entered into an interesting discussion of the possibilities held by standardization as a means of increasing the strength of the national defense outlining the program which would be

adopted for standardization efforts in case of a war with a major power.

Such a program, he declared, would call not only for standardization of materials but also of man power with a drafting of all labor from banker to laborer, having the effect of securing maximum war-time efficiency by filling

“WILDCATTING” SEEN AS BOON TO MINING

New Exploration System Necessary, In View of Western Mining Authority as Expressed Before Cleveland Convention—“Emulate Oil Industry,” W. H. Trask Advises

“WILDCATTING” in the exploration of metal mining regions was urged today before the twenty-fifth annual convention of the American Mining Congress by Walter H. Trask, formerly cashier, Central National Bank, Denver, Colo., who declared in a paper presented before the delegates that it would be well for metal mine operators and developments to apply to their activities many of the exploration methods used by the oil industry.

Outlining the dependence which the mining industry must place in the future upon intensive geologic research after the more obvious deposits have been exhausted, Mr. Trask's paper incorporated the geological theory that major faults were capped after their formation and that no efforts to develop them for their mineral contents should be made unless great expenditures and explorations to deep depths were prepared for. The more logical method of exploration, it is stated, is to search for minor faults and fissures surrounding the major fault. It is in these minor faults that the mineralized solutions and gases found relief in their desire to escape, and they only begin to deposit their burden in quantity when relief from these conditions is obtained.

It is in intensive exploration of areas surrounding major faults that “wildcatting” will come to the fore as a means of adding materially to the production of the mining industry, according to Mr. Trask's theory.

“The psychological time is at hand for intelligent prospecting,” concluded Mr. Trask's presentation of the theory. “In general, find a major fault. Locate and prospect the minor faults, and work will be carried on in essentially favorable localities. When a mineralized minor fault is found, other minor faults, roughly parallel to its general direction,

each place in the aggressive machinery with the man ideally fitted to occupy it.

“The War Department is a strong supporter of the standardization movement,” declared Col. Ruggles in concluding his address, “and it is putting its own house in order successfully in this connection and is cooperating directly with other agencies engaged in the work. It looks directly to these agencies and especially to the American Mining Congress representing the producers of raw materials vital to the national defense for aid and encouragement in the work.”

as well as cross faults are to be expected, and are likely to be highly productive. Often some of these secondary ones do not reach the surface and must be searched for in cross cuts or by the diamond drill. All these factors should be remembered and capitalized in considering conditions in old mining centers where it perhaps is thought that all possible paying ore channels or bodies have already been discovered and explored.”

R. C. GEMMELL SUCCUMBS

ROBERT C. GEMMELL, Assistant Managing Director of the Utah Copper Company and affiliated companies died suddenly on a train in New Mexico, October 25. Mr. Gemmell had not complained of illness and was apparently in good health at the time of his death. He died when asleep.

Mr. Gemmell was one of the best best known mining men of the country. He was associated in mining work with Colonel D. C. Jackling before the organization of the famous Utah Copper Company and their association continued in the development of the Utah Copper and the other porphyry copper properties. Mr. Gemmell became General Superintendent of the Utah Copper Company January 1, 1906, Assistant General Manager in 1909, and General Manager May 1, 1913. He became Assistant Managing Director of the Utah Copper, Nevada Consolidated, Ray Consolidated and Chino Copper Companies in August, 1919.

Mr. Gemmell was born in Pennsylvania, July 5, 1863. He was graduated in engineering from the University of Michigan, which conferred the honorary degree of Master of Engineering on him in 1913. In his earlier professional career he engaged in railroad and hydraulic engineering in various western states.

Woofing and Warping

XII. Representative Nicholas Longworth A Series of Scrutinies Directed Toward Notable Legislative Personalities

By IRA L. SMITH

THE DAY will dawn when the last dog is to be hung—even the end of eternity may come—and still Nicholas Longworth probably will be a member of Congress. As firmly devoted to his party as any tangible Damon might be to an intangible Pythias, he rides high among those who are supposed to believe that Democrats are descended from a tribe of confirmed moon-gazers. Still he is just as much in love with his personal political policies, which look as solid as a Zulu's head to the folks out in Zinzinnati.

He is a member of a wealthy family by birth and an illustrious one by a more recent event. Any imagination, no matter how rheumatic it might be, could easily stretch itself to the point of picturing him as leading the life of Riley. But no, my dear customer, he does not. He is always on the job when the whistle blows at the Capitol, turning out shining solutions to pestiferous problems on his legislative lathe. His various energies as a member of the House, if placed end to end, would reach from here to there several times.

Any member of the House Committee on Ways and Means has enough work to wrestle with, and any gent on that outfit's roster who mills around and whoops jobs up for himself is going to be as busy as a soda fountain clerk in Gohenna. That largely accounts for Mr. Longworth's desk complaining of fatigue just the other day, claiming that no piece of aristocratic office furniture in the House Office Building should have to bear up under such a volume of work.

Mr. Longworth's knowledge of economics would compare favorably with that held by whoever invented them. His vast pack of thoughts on this subject stood him in good stead during committee hearings on the tariff bill when he put several tests of mental skids under witnesses who did not keep their eyes plastered on their p's and q's.

Personally, Mr. Longworth is of a suave sort, with a firm core of personality. He reminds me of a massive cube of steel over which rich folds of purple velvet have been draped.

Although he has been a member of the House for lo and behold these many days, he has not been given to the oratorical outbursts inflicted by some of his colleagues upon the official stenographers and door tenders. Of recent time, however, he has made his tongue turn handsprings on occasions, notably when he presented something Mr. Harding wanted to tell the House, and later when he rang the bell with some remarks that had mention of things Rooseveltian as their high-light.

The House as a body and few of its members as individuals can more than wiggle a legislative finger without Nick having some idea of what it's all about. He has been on the job so long up on Capitol Hill that things have to travel at a right pert clip if they intend to get by him.

With his possession of all this intimacy of what is going on and where it is going, there is little wonder that a saddle is being polished up into which he is scheduled to spring and ride through the next session as leader of his party on the floor.



Nicholas Longworth



OIL SHALE MEN MEET IN NATIONAL CONFERENCE

Past, Present and Future of Industry Discussed in Session at Cleveland—Adopted Resolution Calls for More Intensive Research and Carries Warning Against Illegitimate Promotion Schemes

THE YOUTHFUL oil shale industry had its past reviewed, its present discussed, and its future prophesied during the oil shale conference held in connection with the twenty-fifth annual convention of the American Mining Congress at Cleveland, October 9-14. Minds which have been devoted to shale problems since first work was begun in the industry entered into close deliberation with the result that they became more than ever firmly convinced of the necessity of making immediate preparation for the time when depletion of underground petroleum reserve will swing demand for oil to shale operations. Note also was made of the attraction which the shale industry has offered to fakirs who use its possibilities as a veil to foster illegitimate stock schemes upon the unsuspecting.

SHALE RESOLUTION ADOPTED

The work of the conference was crystallized in a resolution presented to and adopted by the convention, having as its aim the speeding of shale research work and the construction of barriers to keep shady promotion schemes outside the industry. In addition, the resolution urges that government administration of affairs relating to oil shale operations be so arranged as to inspire utmost efficiency and the most rapid growth possible. The Department of the Interior is urged to define specifically what character of labor and improvements shall be acceptable as annual labor, and that in so specifying such annual labor it demand that the work be of substantial value in development of the property. The federal government is urged to provide funds which will permit the Bureau of Mines and the Geological Survey to continue and expand their research work in connection with oil shales. The government is also called upon to re-survey those townships in the oil shale area for which the surveys are incomplete or confusing.

The owners and holders of oil shale placer locations are advised in the resolution to maintain and perfect their titles to the lands included in their holdings and all who are interested in the welfare of oil shale are urged to use every effort to prevent promotion of fake oil shale schemes by reporting all organizations of any kind entering the shale industry to the Promoting and Investigating Committee of the section and to furnish all possible data to those authorities charged with the prosecution

of such cases. This committee was appointed by the conference and consists of Otto L. Hankison, of Toledo; W. D. Waltman, of Denver; A. M. Gillespie, of Buffalo; and C. A. Gillette, of Salt Lake City. This vigilance committee will be called upon to gather information for presentation to the proper legal authorities and heads of the United States Postal Service as a basis for prosecution of state shale promotion schemes. During the course of the conference Dr. Victor C. Alderson, chairman of the section, stated that the peak of domestic well oil production had virtually been reached and that on account of presence of salt water in the Mexican pools less oil would be imported from Mexico. According to the report of the United States Geological and petroleum experts there remain in domestic oil pools nine billion barrels of oil yet to be recovered, he stated.

Dr. Alderson declared that in one seam of oil shale in Colorado there can be recovered 38 billion barrels of oil, or more than four times as much as now remains in all the oil pools of the United States. Dr. Alderson predicted that the oil shales of the country would, in the near future, supply a large part of the oil needed for industry. The conference drew a wealth of information and material for discussion from committee reports drafted during the year since the last conference was held and from papers presented before it by men who have come to be known as authorities upon the various phases of oil shale operations.

"During the past year the oil shale industry has been in a somewhat quiescent stage, owing both to financial conditions and the low price of crude petroleum," stated Albert H. Loew, chairman of the committee on refining, in presenting that body's report to the conference. "The shale oil plants of the country are still in the experimental stage and many are at a standstill for lack of funds.

"With one exception there has been no production of shale oil on a commercial scale and apparently no plant efforts at refining worthy of notice. Laboratory research, however, has demonstrated that practically all the products to be obtained from crude petroleum can be refined from shale oil, and of at least as good quality, for the purposes intended, as the corresponding petroleum products."

Assurances have been received by the committee, Mr. Loew stated, that the

problem of refining costs has been in a great measure solved. "Your committee is of the opinion," he declared, "that when conditions permit the production of crude shale oil on a commercial scale, the industry will not be long retarded by the problem of successful refining."

It is practically impossible for a company to build and operate a shale oil plant under the oil shale leasing law passed by Congress, declared Ralph H. McKee, in addressing the conference. "Fortunately, however," he declared, "a considerable portion of the oil shale deposits were 'located' under the old placer law before the new law went into effect. The oil companies which are interested in these deposits have exclusively concerned themselves with the purchasing of claims located under the old mining law."

In presenting the report of the Committee on Crushing and Retorting, Lewis B. Skinner, chairman, made the following statement:

"Every company engaged to any material extent in the oil industry should have a group of high grade men as a part of its organization, devoting time to preliminary study, to experimentation with oil shale processes and to operation of toy and pilot plants, and should consider the money used in such missionary work as having been well spent."

The Committee on Education reported through its chairman, F. A. Wadleigh, that the leading metallurgical and chemical publications, both American and foreign, had devoted much space to retorting problems and the treatment of shale products and that a vast amount of research work was carried on during the past year by individuals, companies, the United States Bureau of Mines, and various state schools of mines and colleges. "It is with much satisfaction," declared Mr. Wadleigh, "that your committee is enabled to report that the fake exploitation of oil shale has decreased to a very marked degree and the industry is progressing on business lines. The campaign of education has been conscientiously carried on."

Interesting data concerning distribution and importance of the oil shale deposits of the United States were presented by Dean E. Winchester. Mr. Winchester's paper presented a very careful study of the characters of the various deposits and gave the approximate relative value in richness and thickness of the oil shale in Colorado, Kentucky, Utah, Indiana, Wyoming and Nevada.

The oil shale industry was viewed

from the standpoint of the mining man by Roderick D. Burnham. Mr. Burnham's paper entitled, "Why not mining men as well as oil men," drew a corollary between the present and embryonic stage of the shale industry and conditions surrounding the early days of the mining industry. Out of this line of thought Mr. Burnham developed the statement that if the shale industry will follow in the footsteps of its older brother as regards operating and distributing methods the cry that only large companies can participate in shale developments will be stilled. He declared it should be possible for the oil companies to erect retorting and refining plants which will take the shale that is mined by other companies, thus making it possible for many small operators to go into the purely selling end of the game, thus avoiding large expenditures necessary for the retorting, refining and marketing machinery.

William C. Russell, consulting engineer, Denver, read a paper covering the more technical phases of shale operations. The paper took up the following points: mining problems, commercial oil shale, extent of deposit, method of attack, the bed, underground machinery, explosives, underground storage, ventilation, haulage and tramways, mining costs, and the outlook for the future.

The papers presented by these and other authorities coupled with discussions centering around reports of the various committees carried such an endowment of new knowledge concerning the shale industry as to make the conference a notable milestone in the industry's progress.

CURRENT OIL SHALE BIBLIOGRAPHY

Alderson, Victor C.—Oil Shales of Kentucky, Colorado School of Mines' Quarterly, October, 1922, pp. 3-15. Oil Shales of Russia, Colorado School of Mines' Quarterly, October, 1922, p. 15. Development of a New Era, Petroleum Refiner, September 21, 1922, pp. 7-9.

Crouse, C. S.—Oil Shales of Kentucky, Chemical Age, August, 1922, pp. 353-4.

Cunningham-Craig, E. H.—Kukersite, The Oil Shale of Esthonia, Journal of the Institute of Pet. Tech., London, July, 1922, pp. 349-375. (Discussion by Messrs. Watts, Perkin, Hutchins, Nielsen, Reuss, Pitt, Evans, Howell, Thompson, Madgwick, Romanes, the president, and the author.)

Current Bibliography—Mining Congress Journal, September, 1922, p. 886.

Hawley, Robert D.—How to Establish Title to Oil Shale Lands, Mining Congress Journal, September, 1922, pp. 885-886.

Howell, George—The Brunswick Shale Deposits, Oil Engineering and Finance, London, I, 272.

Ironsides, T. G.—Low Temperature Distillation of Oil from Shale, Oil Engineering and Finance, London, I, 294.

Kogerman, P. N.—The Chemical Composition of Esthonian Shale (Kukersite), Private Pamphlet, Dorpat, Esthonia, 1922.

McKee, Ralph H.—Shale Oil, Journal of Ind. and Eng. Chem., September, 1922, pp. 847-849, Shale Oil Developments of the Last Two Years, Railroad Red Book, September, 1922, pp. 851-855.

New South Wales Shale Deposits Are Promising, Int. Petr. Reporter, I, 48.

Operating Regulations to Govern the Method of Mining Oil Shale, Bureau of Mines, 1922, Eng. and Min. Journal-Press, September 2, 1922, p. 421.

Reeves, John R.—The New Albany Shale of Indiana, Bureau of Mines, Reports of Investigations, Serial No. 2390, August, 1922, Eng. and Min. Journal-Press (abstract), September 23, 1922, p. 554.

Retorting of Oil Shales, A New Low Temperature Carbonization Method, Petroleum Times, London, August 12, 1922, p. —

Selwyn-Brown, Arthur — Petroleum From Shale, Universal Engineer, February, 1921, pp. 21-23. Sulphur in Shale Oils, Petroleum Times, London, September 2, 1922, pp. 331-2. Vertical Oil Shale Retorts More Sufficient Than Horizontal, Oil Trade Journal XIII (2) 43.

Welleck, Ernest—Rocks to Give Oil When Wells Run Dry, Popular Science Monthly, September, 1922, pp. 56-58.

OIL SHALE NOTES

The title to 6,400 acres of oil shale land in Rio Blanco County, Colorado, has been held invalid by the General Land Office at Glenwood Springs and the decision sustained by the Commissioners at Washington.

At the Mining Exhibition in Cleveland, the Colorado School of Mines prepared an oil-shale exhibit to cover not only shales from all countries but also a working laboratory, sized oil-shale retort and distillation apparatus.

The authorization by the legislature of Colorado of a bond issue for the Moffat tunnel will make this project an assured fact. The length of time in transit between Denver and the western slope will be reduced to eight hours. This will open not only the oil-shale deposits, but also the great northwest empire of Colorado-Routt and Moffat Counties.

The investigations of Dr. Reinhardt Thiessen on the oil shales of Kentucky seem to indicate that the value of oil shale may be determined by a microscopic examination. This will be of value as supplementary to chemical determinations.

The U. S. Bureau of Mines has issued a series of regulations for the operation of oil shale land leased from the Government.

W. R. WOODFORD AIDS IN CLEVELAND SUCCESS

THE SPIRIT of genial hospitality and informal sociability, which was so welcome and so noticeable a feature of the 25th anniversary convention of the American Mining Congress at Cleveland had a starting point in a personality.

That personality was W. R. Woodford,



W. R. Woodford

president of the Rail & River Coal Company, who, for thirty odd years has had a leading part in the development of Cleveland's enterprises. Unassuming, quiet, Mr. Woodford has built his life success upon sound judgment and personal friendship. As the result whenever he seeks cooperation he has only to send out his invitations and he is sure of his response.

From the forming of the extremely representative Cleveland committee up to the very end of the convention, Mr. Woodford's guidance and direction was an essential factor in making possible the success of this anniversary convention and exposition of mines and mine equipment.

Above all else it was Mr. Woodford's delightful courtesy which made possible the charming and informal social gatherings during the convention week. The many expressions of pleasure on the part of the delegates and their wives at meeting the charming members of the Cleveland Reception Committee, and in regard to the enjoyment which they had at the afternoon teas, are all evidence of the careful attention of Mr. Woodford.

In behalf of all those who attended the Cleveland meeting—the American Mining Congress takes this opportunity of expressing its appreciation of the courtesy and genial hospitality of Cleveland.

USE OF BLUDGEON IS FOREIGN TO COAL INQUIRY

President's Commission Adopts New Mode of Gaining Information—Forsakes Antagonizing Methods of Its Other Bodies Inquiring Into Coal Industry—Welcomes Advice and Suggestions

THE President's commission is seeking to obtain its facts and reach its conclusion by conciliatory and persuasive methods.

The action of the commission in inviting representatives of the miners and operators into private conference, at which they were requested to furnish the commission with all possible information in their possession as to the problems laid down by Congress in the scope of the investigation, has tended to facilitate the work of the commission in delving deeply into the facts without resorting to grand stand play or endless bickering. Both miners and operators gave hearty response to the requests of the commission which are said to promise results in the latter program to be undertaken.

ADVICE IS SOLICITED

The commission has requested the operators and miners to furnish it with their advice and suggestions.

Concretely, the commission has requested advice from the operators and miners on the following points:

What specific data should be secured under each of the topics enumerated in the law? The best and most practicable method to secure this data?

Additional topics the commission should investigate in order to give Congress and the public complete information necessary to a proper understanding of conditions in the coal industry.

Will cooperation be given the commission in securing data so as to eliminate any criticism of its accuracy or validity?

What are the elements that have caused demoralization in the coal industry?

What are practical remedies that would eliminate any or all of these elements?

The Commission has thus announced its policy:

"The sole object of the commission is to endeavor to get all the essential facts touching the coal industry to the end that practical measures may be found to insure a constant supply of coal at as reasonable prices as are consistent with fair wages and profits to those engaged in the industry. The policy of the commission will be to invite and welcome every suggestion and offer of assistance from mine workers, operators, dealers, and consumers of coal. The commission will from time to time make public its findings of fact with the view of informing the public, as well as of eliciting additional information before its formal re-

ports are submitted to the President and Congress. Only with the cooperation of both the industry and the public can the work of the commission be made effective in bringing about industrial security and peace so sorely needed."

CENTERS ON LEGAL ASPECTS

It is believed the work of the commission will largely resolve itself into individual consideration of separate problems outlined in the law by separate members of the commission. While the commission may take some testimony, it is not believed this phase of the inquiry will be extensive as the coal industry has been almost investigated to death during the last five years by Congressional committees and others, which evidence is available for consideration by the commission. Problems before the commission are basic rather than of passing moment and further testimony would simply be cumulative. Individual members of the commission will probably be assigned certain phases of the investigation upon which they will correlate data and study the situation somewhat on the order of consideration of a lawsuit by a judge in chambers.

The extensive technical staff and information resources of the Interior Department are being placed at the disposal of the commission. This action includes particularly the Bureau of Mines and the Geological Survey, which for years have considered coal questions in their studies of the mineral resources of the country.

In John Hays Hammond, the commission has as its chairman one of the foremost mining engineers of the country. To its work, Mr. Hammond is giving the benefit of his experience, covering many years in the mining industry, which took him to all parts of the world. Former vice-president Marshall, of Indiana, adds the legislative viewpoint to the commission. Judicial arbitration of industrial disputes is represented on the commission by Circuit Judge Samuel Alschuler of the 7th Circuit, who arbitrated the differences between the Chicago packers and their employes. In consideration of economic questions, the commission will have the benefit of the experience of Charles P. Neill, who was commissioner of labor years ago and who lately has been handling labor problems for southeastern railroads. He is a close student of political economics. Dr. Edward T. Devine, of New York, also is an economic expert! The public viewpoint is repre-

sented by Clark Howell, editor of the Atlanta Constitution. In Director George Otis Smith, of the Geological Survey, the commission has a public official who for years has studied technical and economic subjects, particularly mineral resources, and who is regarded as one of the national authorities on coal. The commission's secretary, Edward Eyre Hunt, of Ohio, is well versed on problems of the coal industry, having been secretary of the unemployment conference during which the causes of intermittency in the bituminous coal industry were studied.

CONSERVE CHEAP GOLD ORES IS PLEA

PLEADING for conservation of low-grade gold ores that must be wasted unless a balance is maintained between operating costs and value of outputs that will enable these deposits to be worked profitably, H. W. Seaman, a director of the American Mining Congress, addressed the Cleveland convention. These ores are being wasted in values running into vast figures, Mr. Seaman declared, stating that application to the gold industry of legislation akin to the Pittman Act, which has applied a remarkable stimulus to silver mining, would result in conservation of low-grade ores now being ignored and left in positions from which they never will be mined.

Mr. Seaman outlined the "genuine necessity" facing the government to help the gold miner. "The gold miners are not able to pass their losses or excess cost up to the public by increasing the cost of the product," he stated. "That forms the problem facing every gold miner.

"We are spending millions of dollars in conservation in this country. Why not conserve the great bodies of low-grade ore that cannot be handled today, but which must be left in stokes by present operations, never to be mined again? If it were possible to put those on a shelf and say, 'We will mine that after a while,' it would be different. But the mills must not remain idle and so operations must push along to the better paying grades."

THE YEAR IN STANDARDIZATION OF MINING*

By COL. W. R. ROBERTS

Chairman, Coal Mining Section, Standardization Division

TWO YEARS AGO, when I was asked to prepare an address on "Standardization," to be read at the Denver convention, I made a statement in my introduction that I believe is well worth repeating at the present time.

I then called to the attention of the convention the motto of the American Mining Congress:

"SAFETY, EFFICIENCY, AND CONSERVATION"

Certainly a most excellent motto for the Mining Industry, or for any other industry.

The founders of the American Mining Congress were men of very high ideals, but they were also practical men and in choosing their motto as the ideal to which they were going to try to lead the mining industry, they did not forget the means by which they were to accomplish this high purpose. They therefore developed an organization which has consistently worked through many channels to accomplish for the industry these ideals.

I cannot consume your time with an enumeration of the many splendid things which the Congress has done for the mining industry, but must assume that the most of you are familiar with the record of accomplishment which has given the Congress its present established place with the industry.

A POST-WAR MOVEMENT

However, notwithstanding all the excellent work which has been accomplished in many different channels by this organization there was, up to the close of the war, no part of this organization that was devoted to a work that would directly accomplish all three of the objects mentioned in our motto and given us as our watchword of progress.

In fact, it was not until this world crisis had, through necessity, driven us to do some things which previously we had not learned, that we realized how inadequate and imperfect were many of our practices. During this war-period many of our industries were very greatly improved and vast economies were accomplished and production increased and simplified by the elimination of all useless varieties and sizes of products, and thereby standardizing production on the essential things required for the prosecution of the war.

The lesson learned at this time was thoroughly impressed on many of us who were so fortunate as to be directly connected with this work, with the re-

sult that after the war was over, and we had returned to our former callings, we still had in mind the vast benefits that would accrue to the industries of this country if some of the methods that were employed during the war could be applied in the time of peace.

The American Mining Congress, being the representative organization of the entire mining industry, seemed to be the logical organization to establish and promote this work which, by common consent, had been termed "Standardization." The Mining Congress, therefore, three years ago, organized the Standardization Division, which was charged with promoting a campaign of standardization for the mining industry.

At the time this division was organized and plans were being developed for carrying forward this work, we did not realize how fully the work, which was to be done by this new division, directly fulfilled the objects set forth in our motto. However, as our work progressed, and as our organization was extended and diversified to meet the requirements of the work, as it developed, we began more and more to realize how truly this division's labor (when carried to its consummation) would realize the three ideals of "Safety, Efficiency, and Conservation"—the high motto of the American Mining Congress.

I will not offer any discussion, or even illustrations, in support of the above statements. Those present who are familiar with the work which has already been done by the Standardization Division will readily agree that the work of all our committees has been planned and carried forward with the object of working improvements and economies and increasing the safety in all our methods and practices as applied to mining. For those who are not acquainted with the work of this division, and whose support and cooperation we are anxious to secure, we offer a statement of our aims and purposes supplemented by a brief review of work already accomplished.

A STATEMENT OF AIMS

There seems to be a great deal of confusion in the public mind as to what standardization really means, and what it can accomplish for any industry. This lack of knowledge of the real object of standardization leads many to honestly draw the conclusion that it is not only an unimportant undertaking, but may be actually harmful if adopted. While this conclusion is entirely erroneous, nevertheless since it exists it must be removed or it may retard the progress of a work

which has very great possibilities. The best antidote for error is a liberal dose of facts. I have found in the mining industry intelligent and practical men who are ever ready to adopt improved methods and better equipment. I expect to find them equally quick to recognize the benefits of standardization when its advantages are placed before them.

ORGANIZED THREE YEARS

When the work of the Standardization Division was organized in St. Louis three years ago, there was a great diversity of opinion among those present as to how best to proceed with this program of standardization for the mining industry. Many different views were presented, and it was only after a very full discussion that a plan was developed which seemed to best suit the requirements and conditions existing in the industry at that time.

The plan then adopted not only outlined the scope of the work to be covered, but placed quite definite limitations upon our efforts. By this method of procedure we hoped to have the committees that were then appointed to handle the different classifications of work avoid attempting any work which would meet any serious opposition on the part of either the operators or the manufacturers. We also had in mind that the most essential things should be done first, so that the greatest benefits for the industry would be derived as quickly as possible.

We realized at that time that we had undertaken a very large work which would extend over many years; that as we developed our organization to meet the requirements, the work would also expand, and, from the experience we would gain as we proceeded, we could gradually add to the program those things which seemed most essential, and thereby continue to do that which would bring the greatest results from the amount of time and effort expended.

Our committees have faithfully followed the program originally adopted and developed their work along the lines suggested, and otherwise cooperated in a way that has brought most satisfactory results.

REVIEW OF REPORTS

A review of the reports presented by these committees each year, and as published in our Standardization Bulletins, should convince the most skeptical that this work of standardization is not only practical but is most essential to the progress of the industry.

It is difficult to state in any brief man-

*Report presented to Standardization Conference at Cleveland.

ner just how our committees function, and it seems to me that to quote a few paragraphs from certain reports would best illustrate our methods.

Referring to the report of the committee on "Mine Drainage," presented at our last Standardization Conference in Chicago a year ago, I quote the following from the introduction to this report:

"Were it possible to standardize the design of mine pumps, this committee could only recommend such procedure in the event that we believed that the ultimate achievement in such design had been reached and that no benefit could accrue either to user or maker from the competitive manufacture of such equipment. This is patently not the case, and we have consequently attempted to perform our work along lines which we consider more useful to all concerned.

"It is our belief that there are many different problems which confront us in mine drainage, and, though these differ widely, due to local conditions, we think that they may be roughly separated into several general classes from the standpoint of service required from pumping equipment.

"We have, therefore, attempted to divide drainage problems into these several classes, and to set down certain specifications for pumps suitable for service within each class, which in no way limit the design of such equipment but rather set for each a criterion of performance within its group.

"We have further appended a list of what we believe to be good and safe rules for the installation and operation of mine pumps, and we recommend same as standard practice."

It seems to me that the preamble to this report indicates the broad and wise course pursued by our committees in their work better than any words of mine could do.

Quoting again from the last year's report of the Committee on Mine Ventilation, we have the following:

"Since mine fans must be built to meet various conditions found in the mining field, the question of their standardization is considered impractical. Your committee, therefore, has confined its recommendations to improvements and practices of mine ventilation, which is standardization in its broader sense, and conforms to the instructions issued by the General Committee, knowing that the details of standardization would in due time naturally follow.

"It is with these fundamental principles in view that we submit to your Congress the following recommendations with the hope that they will receive your careful consideration."

After a very thorough discussion of the problems of mine ventilation, recommendations are made for improvement in present practices with definite specifications covering the improved practice.

Again we find this committee faithfully following the program adopted and the report is a real treatise on mine ventilation.

Referring now to the work of the committee on "Underground Transportation": on first thought one would naturally draw the conclusion that it would be very difficult for a committee to make any recommendations on standardization of underground transportation equipment that would be at all practical. However, this committee has presented recommendations which will be invaluable to the industry when adopted.

CAREFUL STUDIES MADE

During the first year this committee studied with great care all of the principal problems connected with underground transportation, and, in their report, made definite recommendations regarding improvement in practices and methods along lines which were entirely practical and of great value.

As the work of the committee developed, and after the general problems enumerated above had been solved, the committee organized three sub-committees:

One on mine locomotives;

One on mine cars, including safety appliances, and

One on mine tracks and signals.

The latter committee last year presented a report making definite recommendations regarding mine tracks, accompanied by complete specifications and drawings for turn-outs, frogs, switches, etc., which are complete in every detail for certain specified track gauges, and enable any mine engineer to lay out his mine tracks from these standards readily and quickly.

This same sub-committee has supplemented its work of last year with an additional report going on from where the last report left off, adding much more valuable data and many other good recommendations covering mine tracks.

The sub-committee on mine cars rendered only a brief report last year outlining its program and setting out fully the work which it would accomplish this year. The report which it has rendered, and which will be presented to this conference, indicates a vast amount of work done during the year, not only in its scope, but in its detail. This report will be presented later and fully discussed. I simply call attention to it at this time as illustrating the very practical and valuable work which our committees are doing.

Our other committees have pursued the same course as the ones referred to, and have done equally valuable work. We cannot take time, however, to review all reports and believe we have sufficiently illustrated the scope and character of the work our committees are doing to secure your approval of this work.

The Standardization Bulletins issued by the American Mining Congress each year since this work was inaugurated indicate how it has grown. To meet this gradual development, our committees have been expanded, some of them into several sub-committees to handle sub-classifications of work allotted to such committee. Also new committees have been organized to handle other classifications of work which were not taken up in the beginning. Otherwise the Standardization Division has been naturally and logically expanded to meet the ever-increasing demands as the work of our campaign developed.

At our standardization conference in Chicago last year, we made a similar review of the development of this work, and of the organization composing the Standardization Division, and at that time pointed out the urgent necessity for supplementing our present voluntary system with a paid organization that would devote all its time to directing this great work. All we said at that time applies with greater force now, since our organization has been materially increased during the past year, and the work is becoming more and more arduous on those of us who have been trying to direct it. We must, therefore, again urge upon the American Mining Congress the necessity of securing the services of someone competent to carry on the great mass of detail involved in this work. Such paid assistants could work under the direction of the chairmen of the two general committees—at least until such time as this paid and permanent organization had developed sufficient knowledge and experience to enable them to take over the entire responsibility for the work.

A NECESSARY STEP

I must again remind you that this step is absolutely necessary if we expect to reap the benefits of standardization in the mining industry in the near future. This step is also necessary for another, and equally important, reason, which I also pointed out to the convention last year. Several nations of Europe, who are our greatest competitors for world trade, are far in advance of us in standardizing their products, especially all those which are intended for foreign consumption. We cannot hope to keep pace with them in world trade unless we also keep pace with them in standardizing our products. With our present voluntary organization, we cannot hope to catch up with them, much less to keep pace with them.

I do not wish to be misunderstood in this plea for a paid and permanent organization to handle this standardization work. I do not believe that any such organization could replace our present voluntary system, as such an organiza-

tion would not be competent to do the work which has been done by our committees, and which they will continue to do. My only thought is that this voluntary organization should be supplemented by a permanent, paid organization to assist in handling the work.

IMPRESSED BY WORK

When I read the reports each year by our various committees, I am not only impressed with the splendid work which they are doing for the industry, but I visualize the evolution of this industry when the recommendations of our committees have been adopted and put into practice.

I do not believe there is any other industry in which the waste of effort and of money is so great as in the mining industry. This waste, this lack of conservation of our effort and our resources, is due very largely to a lack of proper methods and practices, and to the application of the intelligent cooperation between the engineers, the manufacturers and the operating officials in the mining industry.

It is the primary function of the Standardization Division to direct the campaign to improve these methods and practices and secure this cooperation for the common good of all those interested in the industry, and for the ultimate benefit of the country at large.

It is a wonderful opportunity to be offered to any organization, and, if we fail to improve this opportunity, we will be held accountable by our nation for a grave and serious neglect.

A CORRECTION

THE MINING CONGRESS JOURNAL has been fortunate in a freedom from necessity for correction of typographical or other errors appearing in its columns. It regrets the necessity, but welcomes the opportunity, to correct an erroneous impression created by typographical omission of a sentence in the review of relationship between legislation and the mining industry by Judge J. W. Thompson, law examiner of the U. S. Bureau of Mines, in the October issue, and for loss of sequence in the story caused by a condensation necessary to conform with space. This corrects the impression carried by the story as it appeared that anti-trust legislation was passed May 16, 1910, the author's manuscript making it plain that this date marked the passage of the bill creating the Bureau of Mines.

MINING CONGRESS AIDS ARGONAUT STUDY

Takes Action in Response to Request of California Industrial Commission—Recommendations Framed at Cleveland

THE AMERICAN MINING CONGRESS is cooperating with the Industrial Accident Commission of California in the study of available facts concerning the Argonaut mine fire, results of which will form the basis for recommendations designed to prevent similar disasters in the future, responding



Edwin Higgins

to a telegraphic request for this cooperation made by Will J. French, chairman of the commission. The request made by Mr. French in his telegram to Secretary Callbreath of the Congress, that recommendations be drafted by that body for presentation to the conference, was made the subject of immediate action at the Cleveland convention. A committee was appointed consisting of Charles A. Mitke, consulting engineer, Bisbee, Ariz., chairman; Wm. Conibear, Cleveland-Cliffs Iron Co.; Lucien Eaton, Cleveland-Cliffs Iron Co.; C. L. Berrien, Anaconda Copper Mining Co.; H. F. Lunt, Colorado Mine Inspector; and J. W. Paul, of the Bureau of Mines, Edwin Higgins, Metals Exploration Co.; and Robert I. Kerr, California Metal & Mineral Producers Association.

This committee in its report to the Cleveland convention expressed the belief that every mine presents separate and distinct fire hazard problems, requiring special study and treatment. The committee offered the following preventive measures:

Keep the mine workings and entrances clear of all unnecessary accumulations of combustible or inflammable material; establish rules for the safe handling and storage of oils, carbide and explosives; maintain adequate insulation on all electric wiring and equipment; caution miners, by means of placards and otherwise, as to the dangers of smoking under ground; all dry shafts should be fireproofed. In cases where the use of

gunite, concrete or other fire-proof material is not feasible a sprinkler system should be installed.

The committee advanced the following fire-fighting and life-saving measures:

Formulate a plan of action to be followed in case of fire in any part of the mines; make suitable arrangements for warning underground men in case of fire; a study should be made of mine ventilation, and the direction of air currents recorded on a suitable map; mechanical ventilation recommended for large mines, especially for those in which air currents are variable and unstable. The question as to whether or not provision should be made for reversing the air currents in time of fire depends on conditions existing at each individual mine.

Continuing its development of this subject, the committee made these additional suggestions:

The installation of fire doors recommended in cases where they will serve to isolate fires or protect men; wherever possible, when mine workings extend a distance of 1,000 feet or more from the mine opening, or entrance, connection with a closely adjacent mine should be maintained; in further addition to the state requirements regarding second exits, where conditions warrant it, provision be made for sealing off second exits or main shafts from the other workings; provide dry shaft stations and pump houses with means of extinguishing fires, which should preferably consist of hose connected to water under pressure (if this is not available water barrels or fire-foam extinguishers should be provided); all electrical installations should be provided with carbon-tetrachloride extinguishers; oxygen-breathing apparatus should be available for rescue work.

The Congress at its Cleveland convention named Edwin Higgins as its special representative in this cooperation, providing him with authority to organize a special committee for this work, with its first duty being to join in conference, called for October 24, of mine operators, miners and others interested to consider this subject.



NATIONAL LEGISLATION

By E. H. PULLMAN

THE country is enjoying a respite from Congressional activity. After almost continuous session since the spring of 1921 both Houses adjourned on September 22. Unless a special session is called in November, Congress will not meet again until the regular session of December 4, which will terminate March 4 following. President Harding hopes industrial and other conditions will not force an extra session next spring, in which event Congress will not reconvene until December, 1923.

During the session just closed, considerable legislation was enacted, including the revised tariff and revenue laws. Laws of vital importance to the coal industry were also placed on the statute books at the request of the President to meet the emergency caused by the coal strike, and which are designed to prevent future strikes and to stabilize the industry. These measures provide for investigation of the coal industry by a commission and for regulation and distribution of prices of coal by a Federal Fuel Distributor and the Interstate Commerce Commission. The coal commission will make a preliminary report January 15, 1923; a separate report on the anthracite industry in July, 1923, and a final report in September, 1923. The investigation is expected to cover every phase of the coal industry, and is designed to assist Congress in establishing a wise and efficient policy toward it. Further regulation of the coal industry is proposed in a bill suggesting a Constitutional amendment to give Congress power to regulate production and commerce in coal oil, and gas. Other coal proposals call for restraint on coal prices for three years, designed to prevent diversion of shipments from the regular markets of supply, and also for movement of coal under long-time contracts and publication of coal contracts by the Interstate Commerce Commission.

LABOR LEGISLATION

In the field of labor legislation a measure was introduced to check activities of labor unions by the organization

under the Department of Labor of national unions of labor and employers. These unions would be subject to suit in federal courts and be required to refrain from interfering with commerce. Several bills were introduced to abolish the Railway Labor Board and to substitute a new board of railroad adjustment with authority to enforce its orders similar to that now possessed by the Interstate Commerce Commission, designed to prevent stoppage of commerce.

A bill was introduced to prevent suits by the government against peaceful activities and purposes of labor. The success of the government in obtaining an injunction against striking railroad employes aroused labor to such an extent that an attempt was made to impeach Attorney General Daugherty. A resolution of impeachment was introduced, but its consideration postponed until December. Additional bills for a Constitutional amendment to prohibit child labor appeared.

TARIFF REVISION

One of the last acts of the session was the revised tariff law and new rates are now in effect which are expected to promote the development of many important mining industries, including manganese, tungsten, graphite and magnesite. A new tariff proposal was suggested which provides for the determination of duties by a non-partisan court of nine judges relieving Congress of this phase of tariff-making. Tax matters also came to the fore, bills being introduced to increase corporation and individual taxes. A law was passed providing for amended income tax returns for Oklahoma Indians to secure for them depletion allowances.

Several mining bills were enacted, including a law permitting leases for mining purposes on the Fort Peck and Blackfeet Indian reservations in Montana and extending the provisions of the leasing law for another year to lands in Utah. Quarry leases were authorized

in the Philippine Islands. Additional bills were introduced to relieve mining claimants in the Red River region in Oklahoma who were dispossessed by the recent Supreme Court decision. To relieve congestion of cases in federal courts, a law was enacted authorizing the appointment of twenty-four additional federal district judges. To protect life and property from unlawful threats, the Senate Judiciary Committee reported a bill imposing heavy fines for sending communications through the mails threatening bodily harm or injury to persons or property. A proposal to lease government-owned properties at Muscle Shoals, Alabama, to the Alabama Power Company was advanced.

WAR CONSCRIPTION

The conscription of money, industries and property in addition to citizens was proposed for future wars.

Although Congress passed the soldier bonus bill, it failed of enactment due to veto by the President. While the House passed the bill over the veto, it failed in the Senate. The President's objection to the law was based on the fact that it carried no provision to meet its expenses which he had suggested should take the form of a sales tax but which Congress refused to enact. The veto was also based on the fact that it was unwise at this time to add additional expense. A new bonus bill, however, has appeared which may be considered next session.

An act authorizing incorporation of American companies to engage in business in China, as was also a law to issue certificates of identification to commercial travelers in Latin-American countries, was passed.

The Census Bureau recommended to Congress the consolidation of the statistical services of the Government in the Bureau of Federal Statistics to take the place of the Census Bureau with divisions of analysis and research; foreign trade; industrial commerce; occupations; mineral production, and factory statistics. The work of the Bureau of

IMPORTANT BILLS REVIEWED IN THIS ISSUE

COAL—

- H. R. 12377: Commission Investigation; enacted into law
 H. R. 12472: Distribution; enacted into law
 H. J. Res. 381: Volstead (Rep.) Minn. (Regulation)
 S. 3985: King (Dem.), Utah. (Price Control)
 H. R. 12718: McSwain (Dem.), S. C. (Contracts)

LABOR—

- H. R. 12683: Fairchild (Rep.), N. Y. (By request, National Unions)
 H. R. 12581: Hoch (Rep.), Kans. (Adjustment board)
 H. R. 12650: Cooper (Rep.), Ohio. (Labor Board)
 H. R. 12647: Goodykoontz (Rep.), W. Va.
 H. R. 12622: Schall (Rep.), Minn. (Prosecution exemption)
 H. Res. 425: Keller (Rep.), Minn. (Injunction impeachment)
 H. J. Res. 376: Johnson (Rep.), Wash. (Child labor)
 H. J. Res. 385: Graham (Rep.), Ill.

TARIFF—

- H. R. 7456: Revised rates; enacted into law
 H. J. Res. 380: Ansorge (Rep.), N. Y. (Rate making)

TAXATION—

- S. 3992: King (Dem.), Utah. (Tax directory)
 S. 3993: King (Dem.), Utah. (Corporation taxes)
 S. 3994: King (Dem.), Utah. (Individual taxes)
 H. R. 10193: Indian taxes; enacted into law

MINING—

- H. R. 8010: Indian lands; enacted into law
 S. 2460: Utah lands; enacted into law
 S. J. Res. 23: Quarry leasing; enacted into law
 H. R. 12580: Murphy (Rep.), Ohio. (Oklahoma claims)

MISCELLANEOUS—

- H. R. 9103: Additional judges; enacted into law
 S. 3962: Threatening letters; reported by committee
 H. J. Res. 383: Hull (Rep.), Iowa. (Muscle Shoals)
 H. J. Res. 384: Johnson (Rep.), S. D. (War conscription)
 S. 4020: Bursum (Rep.), N. M. (Soldier bonus)
 H. R. 4810: China trade; enacted into law
 S. 2716: Traveling salesmen; enacted into law

Mines, the Geological Survey and the Bureau of Labor Statistics along these lines will be transferred to the new bureau under the plan.

The Division of Mineral Production Statistics would have charge of the census every ten years of mines and quarries and publish statistics of mineral production which are now issued by the Geological Survey. It is recommended that the Bureau of Labor Statistics be renamed the Bureau of Labor Economics. It is recommended that statistics of mineral production be issued every two years.

When the House reconvenes a new member will be appointed on the Mines and Mining Committee to succeed Rep. C. R. Connell, of the Scranton, Pa., district, who recently died.

COAL

COMMISSION INVESTIGATION

H. R. 12377. Enacted into law. This is the outcome of the five months' coal strike and provides for investigation of the coal industry by a commission of seven members appointed by the President. The Commission is required to investigate and report on problems and questions relative to the coal industry with a view to aiding Congress in legislation which will insure a supply of coal to industries and the public and maintain the uninterrupted flow of commerce. The commission is to specifically investigate and report as to the following: Ownership and titles of mines; prices; organizations and persons connected with the coal industry; cost of produc-

tion; profits realized by operators or owners of mines during the last ten years; profits of other persons or corporations having to do with production; distribution and sale; labor costs; wages paid; wage contracts; irregular production; waste of coal, and suggestions as to remedy; conditions generally under which coal is produced; causes which induce strikes, and all facts, circumstances, or conditions helpful in determining and establishing a wise and efficient policy by the government relative to the industry. The commission is to make a separate investigation and report on the anthracite industry covering the foregoing and every other phase of the anthracite industry, including production, transportation and distribution and the organized or other relationships among operators or workers or among persons engaged in production, transportation or distribution of coal.

The commission is required to submit recommendations relative to the following:

Standardizing mines upon the basis of their economic productive capacity and regarding the closing down of mines which, by reason of natural limitations, or other conditions, fall below the standard.

Ascertaining and standardizing the cost of living for mine workers and living conditions to surround the workmen with reasonable comforts and standardizing also as far as practicable the amount of work a man shall perform for a reasonable wage, recognizing the

value and effect of such surroundings on their efficiency.

Standardizing a basis of arriving at the overhead cost of producing and distributing coal, including delivery to consumer, recognizing that the standardized cost of living to the miners should be the first and irreducible item of expense.

The advisability of any legislation having to do with government or private ownership, regulation or control in the coal industry.

The Commission is to make a preliminary report to Congress not later than January 15, 1923; report on the anthracite industry on or before July 1, 1923, and a final report in September, 1923.

The commission is given wide authority to require evidence of witnesses and production of papers.

The law carries an appropriation of \$200,000 for expenses of the commission.

DISTRIBUTION

H. R. 12472. Enacted into law. This provides for the appointment of a federal fuel distributor and for issuance by the Interstate Commerce Commission of priorities and embargoes in coal shipments and to prevent unreasonable prices for fuel. The law was based on the emergency created by the coal strike. It authorizes the commission to issue in transportation of coal or other fuel orders for priorities in car service, embargoes, and other suitable measures in favor of or against any carrier, including vessels suitable for transportation of coal on the inland waters of the

United States which, for such purpose, shall be subject to the Interstate Commerce Act, or region, municipality, community, or person, copartnership or corporation and to take any other necessary and appropriate steps for priority in transportation, and for equitable distribution of coal or other fuel to meet the emergency and to promote the general welfare, and to prevent, upon the part of any person, partnership, association or corporation, the purchase or sale of coal or other fuel at prices unjustly or unreasonably high. The Federal Fuel Distributor is to investigate as follows:

Whether there exists within the United States or any part thereof a shortage of coal or other fuel and the extent of such shortage:

The fields of production of coal and other fuel and the principal markets to which such production is or may be transported and distributed and the means and methods of distribution:

The prices normally and usually charged for such coal and other fuel and whether current prices, considering the costs of production and distribution, are just and reasonable; and

The nature and location of consumers; and any other facts relating to the production, transportation and distribution of coal and other fuel. The bill provides a fine of not less than \$1,000 or more than \$20,000 for abuse of priority orders. The bill appropriates \$250,000 for its enforcement. It authorizes the President to suspend operation of the law by proclamation when the emergency is past. Application of the law is limited to one year after its enactment, September 22, 1923.

REGULATION

H. J. Res. 381. Introduced by Mr. Volstead, Rep., Minnesota. Referred to the Judiciary Committee. It proposes a constitutional amendment as follows:

"Congress may regulate the production of and commerce in the coal, oil and gas from which interstate and foreign commerce are supplied and such regulation shall be supreme but may be concurrent with any regulation not in conflict therewith made by any State."

PRICE CONTROL

S. 3985. Introduced by Mr. King, Dem., Utah. Referred to the Judiciary Committee. It proposes that for three years it shall be unlawful for any person to buy, sell, acquire, handle or hold or to contract to buy, etc., any coal shipped in commerce when the purpose is to affect, whether temporarily or otherwise, the market price of such coal by diverting any shipment of such coal from its regular and normal movement to the consumers' market and limiting the supply of such coal on the market.

Violations of the law would subject

the offender to a fine of not more than \$10,000 or by imprisonment of not more than two years or both.

CONTRACTS

H. R. 12718. Introduced by Mr. McSwain, Dem., S. C. Referred to the Committee on Interstate and Foreign Commerce. This bill proposes to register with the Interstate Commerce Commission copies of contracts for deliveries of coal for periods of three months or more between consumers or fuel dealers and coal companies, delivery under which will be required of railroads by the commission. If the coal company fails to perform the contract and sells or delivers coal to other consumers or dealers, authority is given to the commission to prohibit transportation to such companies. The commission is authorized to prescribe a uniform contract, and, when contracts are registered with it, they shall be open to public inspection. If coal companies violate contracts they shall be liable for action for damages, whether proximate or remotely suffered by consumers or dealers and shall be triable by the district court where the consumer or coal dealer resides, regardless of the amount involved. If any coal company shall be convicted in any prosecution in which the government shall be the complainant and shall violate two or more registered contracts with two or more consumers or dealers the commission shall forbid it transportation facilities for a period of five years.

LABOR

NATIONAL UNIONS

H. R. 12683. Introduced by Mr. Fairchild, Rep., N. Y., by request. Referred to the Committee on Labor. This bill authorizes the formation of national unions under a commission in the Department of Labor for the enrollment of workers' unions and employers of labor.

The commission shall enroll workers into national unions whose constitution shall forbid disturbances of commercial life and shall require the submission of controversies to United States courts, accepting their decision as final. The bill provides that national unions and their combinations shall be recognized in the courts as corporate bodies, to sue and be sued. It further provides that every employer, individual or corporate, employing twenty-five or more workers in any public utility or common carrier, of whose liability to enrollment the commissioner shall decide, shall file with the commissioner a record of the workers in their employ. Every employer, if not incorporated, shall enter into an obligation and every incorporated company employing labor shall adopt a resolution agreeing to refrain from acts disturbing the commercial life of the country and to

submit all controversies which can not be composed by private negotiations with unions, or workers, or other parties, to the courts for adjudication and to accept their decision on final appeal without further controversy. Violation of this provision would be punished by a fine of \$5 a day for each employe employed after thirty days' notice from the commissioner of default to enter into this engagement. No engagement of a worker shall be effective, and no wages shall be paid to such worker until he shall have filed with his employer a certificate of membership in a national union organized under this act.

No employer shall employ outside workers. Violation of this provision would be punished by a fine of \$5 a day for each outside worker employed.

The bill imposes a tax of \$5 annually on all individuals who, sixty days after the enactment of this bill, are members of unions of workers in industries, public utilities, or common carriers not organized under this act.

The real purpose of the legislation is stated in the declaration that for the public peace, health and the general welfare of the people of the United States, the industries, employment, public utilities, and common carriers shall be operated with reasonable continuity and efficiency in order that the people may live in peace and security and be supplied with the necessaries of life. No person, firm, corporation or association of persons shall in any manner or to any extent willfully hinder, delay, limit or suspend such continuous and efficient operation for the purpose of evading the purpose and intent of the provisions of the act, nor shall any person, firm, corporation or association of persons do any act or refrain to perform any duty herein enjoined with the intent to hinder, delay, limit or suspend such continuous and efficient operation as aforesaid, except under the terms and conditions provided by this act.

ADJUSTMENT BOARD

H. R. 12581. Introduced by Mr. Hoch, Rep., Kansas. Referred to the Interstate Commerce Committee. It proposes a board of railroad adjustment for settlement of disputes between railroads and their employes in place of the present Railroad Labor Board. The bill is designed to prevent interruption of commerce caused by disputes between railroads and their employes. The board would consist of five members to serve for ten years each with offices in Washington, D. C. The board would study the relations between railroads and their employes, particularly questions relating to wages, hours of labor, other conditions of employment and the privileges, rights and duties of railroads and

employees. Upon decision of any dispute, the board will have power to issue orders necessary to prevent interruption of commerce. The bill declares it to be necessary in order to prevent interruption of commerce that railroad employes shall be paid just and reasonable wages, shall have reasonable hours of labor, proper and reasonable working conditions and be safeguarded by reasonable rules and practices. In determining the justness and reasonableness of wages, hours of labor, working conditions or rules and practices, the board shall take into consideration the scale of wages paid for similar kinds of work in other industries; relation between wages and cost of living; hazards of employment; training and skill required; degree of responsibility; character and regularity of employment; length of service already performed and any seniority or other rights to which justly entitled by reason of such length of service, and any other facts and circumstances. The bill further provides that any union or association of employes or carriers which shall incorporate under the laws of any State shall be considered by the board as a legal entity and may appear before the board. The right of incorporated unions or associations and of unincorporated unions or associations of employes to bargain collectively for their members through representatives of their own choosing is recognized.

The bill forbids railroads from discharging employes or causing lockouts for the purpose of forcing employes to terms, or interrupting or delaying commerce. Employes of railroads are forbidden "to conspire together or to engage in any concerted movement to quit employment with the purpose or intent of forcing the employing carriers to terms in any dispute or for the purpose or with the intent of substantially interrupting, delaying or burdening commerce and thereby accomplishing the result sought by employes in any dispute." The act does not deny to the individual employe the right voluntarily to quit employment. Any employe who refuses to accept any finding or order of the board and voluntarily quits employment shall forfeit any rights and privileges which he may have acquired by reason of employment, except to receive compensation as may be due him at the time of quitting. Any such rights and privileges, however, may be restored to him upon order of the board.

The bill makes it unlawful for any person, co-partnership, corporation or association to induce or seek to induce any person to do any act hereby declared unlawful or to do or fail to do any act for the purpose of substantially interrupting, delaying or burdening commerce and with the result of endanger-

ing the public peace, the public health and injuring the general welfare. It shall be unlawful for any person, corporation or association of persons to engage in threats of any sort to intimidate in any manner or in any way molest or interfere with the peace and comfort of any employe of any carrier for the purpose of inducing such employe to quit employment or to engage in threats to quit employment or to engage in any threats against any person or any intimidation of any sort for the purpose of preventing any person from accepting employment.

Authority is given to the board and to the Interstate Commerce Commission to hold joint hearings concerning matters in dispute between the railroads and employes. Authority under existing law for enforcement of orders by the Interstate Commerce Commission is given the Board of Railroad Adjustment for enforcement of its orders. Violation of the law would subject the offender to a fine of \$1,000, imprisonment for one year or both.

The bill appropriates \$50,000 up to June 30, 1923, and \$100,000 for the following year.

LABOR BOARD

H. R. 12650. Introduced by Mr. Cooper, Rep., Ohio. Referred to the Committee on Interstate Commerce. This bill repeals the law authorizing establishment of the Railroad Labor Board and transfers its functions to the U. S. Board of Mediation and Conciliation. The bill provides that railroads and other employes shall exert every effort to avoid interruption of operation. Disputes shall be considered and decided in conference between representatives designated by railroads and employes, but, if the dispute is not decided, it shall be reported to the Mediation Board.

H. R. 12647. Introduced by Mr. Goodykoontz, Rep., W. Va. Referred to the Committee on Interstate and Foreign Commerce. This bill proposes to abolish the Railroad Labor Board.

PROSECUTION EXEMPTION

H. R. 12622. Introduced by Mr. Schall, Rep., Minn. Referred to the Judiciary Committee. This bill proposes to amend the Clayton Anti-trust Act of 1914 by providing that the authority of the Attorney General and district attorneys to institute equity proceedings to prevent and restrain violations of the law shall not extend to peaceful activities and purposes of labor and agricultural organizations specified as exempt by that act.

INJUNCTION IMPEACHMENT

H. Res. 425. Introduced by Mr. Keller, Rep., Minn. Referred to the Judiciary Committee. This resolution directs the committee to inquire into the official con-

duct of Attorney General Daugherty in connection with the strike injunction and to report whether that official shall be impeached.

CHILD LABOR

H. J. Res. 376. Introduced by Mr. Johnson, Rep., Washington. Referred to the Judiciary Committee. It proposes a constitutional amendment giving Congress power to regulate or prohibit throughout the United States the employment of children under eighteen years.

H. J. Res. 385. Introduced by Mr. Graham, Rep., Ill. Referred to the Committee on Judiciary. It proposes an amendment to the Constitution giving Congress power to regulate child labor within the various States, Territories, and dependencies of the United States.

TARIFF

REVISED RATES

H. R. 7456. Enacted into law. This bill is known as the tariff law of 1922, imposing rates of duty on imported articles to protect American industries. The law authorizes the President, on reports by the Tariff Commission, to lower or increase tariff duties by not more than 50 percent to equalize differences in cost of production in the United States and foreign countries.

COURT

H. J. Res. 380. Introduced by Mr. Anson, Rep., New York. Referred to the Committee on Ways and Means. It proposes a constitutional amendment under which Congress would retain power to enact a principle or basis of tariff computation, such as protective tariff, tariff for revenue only or other principle, but that the power to apply such principle or basis, to hear and determine facts and prescribe duties on imported articles, shall be vested in a permanent non-partisan tariff court, of nine judges, sitting in Washington. The judges would be paid \$12,500 annual salary. Congress would also have power to make provision for appeal from decisions of this court but any tariff court of appeals so created would be composed of not more than five judges.

TAXATION

DIRECTORY

S. 3992. Introduced by Mr. King, Dem., Utah. Referred to the Finance Committee. It proposes the publication by the Treasury Department of an annual income tax directory containing the names and addresses of persons filing income tax returns.

CORPORATION TAXES

S. 3993. Introduced by Mr. King, Dem., Utah. Referred to the Finance Committee. This bill is designed to prevent monopoly in industries by increasing taxes

on corporations beginning January 1, 1923. The taxes would begin at 10 percent on \$10,000,000 net income, ranging upward to 20 percent on incomes in excess of \$20,000,000. The bill continues in effect the depletion and depreciation clauses of the existing law concerning mines, oil and gas wells and other natural resources.

INDIVIDUAL TAXES

S. 3994. Introduced by Mr. King, Dem., Utah. Referred to the Finance Committee. This bill proposes, effective January 1, 1923, income taxes on individuals ranging from 2 percent on \$2,000 up to 40 percent on incomes exceeding \$70,000.

INDIAN TAXES

H. R. 10193. Enacted into law. This law authorizes the Interior Department to contract with firms or individuals for the preparation of amended income tax returns covering 1919, 1920, and 1921 for the Five Civilized Tribes of Indians in Oklahoma, who, it is alleged, have not received proper depletion allowances. Those preparing amended returns will receive as compensation not more than 10 percent of savings in taxes allowed the Indians for deductions for depletion.

MINING

INDIAN LANDS

H. R. 8010. Enacted into law. It provides that land reserved for school and agency purposes and all other unallotted lands on the Fort Peck and Blackfeet, Montana, Indian Reservations reserved from allotment or other disposition may be leased for mining purposes under regulations of the Interior Department.

UTAH LANDS

S. 2460. Enacted into law September 15, 1922. It provides that for twelve months thereafter the provisions of section 18a of the leasing law shall extend to land in Utah embraced in executive withdrawal of October 4, 1909.

QUARRY LEASING

S. J. Res. 23. Enacted into law. It authorizes the War Department to grant revocable licenses, for the quarrying and removal of stone from the Mariveles Military Reservation, Philippine Islands, to the government of the islands and to persons and corporations in the islands upon conditions fixed by the Secretary of War.

OKLAHOMA CLAIMS

H. R. 12580. Introduced by Mr. Murphy, Rep., Ohio. Referred to the Committee on Public Lands. This bill proposes to issue leases or permits in the Red River region of Oklahoma to those whose claims were recently nullified by the Supreme Court.

ADDITIONAL JUDGES

H. R. 9103. Enacted into law. This

law creates additional federal district judges as follows: One each for the eastern district of New York; district of New Jersey; eastern district of Pennsylvania; western district of Pennsylvania; northern district of Texas; southern district of Florida; eastern district of Massachusetts; northern district of Ohio; middle district of Tennessee; northern district of Illinois; eastern district of Illinois; eastern district of Minnesota; eastern district of Missouri; western district of Missouri; eastern district of Oklahoma; district of Montana; northern district of California; southern district of New Mexico, and district of Arizona; two each for the district of Massachusetts and the southern district of New York.

The law also provides for an annual conference on the last Monday in September at Washington or any other place in the United States designated by Chief Justice of the Supreme Court of representatives of each of the judicial circuits as to the needs of the circuits and the administration of justice.

THREATENING LETTERS

S. 3962. Reported by the Senate Judiciary Committee. The bill declares letters or other communications threatening bodily harm or injuries to persons or property shall be non-mailable. Persons mailing such matter would, upon conviction, be fined not more than \$3,000 or imprisoned not more than two years or both.

MUSCLE SHOALS

H. J. Res. 383. Introduced by Mr. Hull, Rep., Iowa. Referred to the Military Affairs Committee. It proposes to sell or lease government-owned properties at or near Muscle Shoals, Alabama, to the Alabama Power Company.

WAR CONSCRIPTION

H. J. Res. 384. Introduced by Mr. Johnson, Rep., S. Dak. Referred to Judiciary Committee. It proposes a constitutional amendment providing that in future wars Congress shall provide for the conscription of every citizen and of all money, industries and property necessary to prosecution of war, and shall limit the profits for the use of such moneys, industries and property.

SOLDIER BONUS

S. 4020. Introduced by Mr. Bursum, Rep., New Mexico. Referred to the Military Affairs Committee. The former soldier bonus bill having failed of enactment in the last session, this bill proposes a new bonus of \$20 per month to veterans of the war. The former bonus bill was referred to the Finance Committee.

CHINA TRADE

H. R. 4810. Enacted into law. This

law authorizes the incorporation by five or more individuals, a majority of whom shall be citizens of the United States, of corporations under District of Columbia laws for the purpose of engaging in business in China. The operation of the law is under the Department of Commerce.

TRAVELING SALESMEN

S. 2716. Enacted into law. This law authorizes the Department of Commerce to issue certificates of identification to commercial travelers of the United States visiting Latin-American countries.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912,

Of THE MINING CONGRESS JOURNAL, published monthly at Washington, D. C., for October, 1922.

City of Washington,
District of Columbia, ss.:

Before me, a Notary Public, in and for the state and county aforesaid, personally appeared E. Russell Coombes, who, having been duly sworn according to law, deposes and says that she is the business manager of THE MINING CONGRESS JOURNAL, and that the following is, to the best of her knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 443, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor and business managers are:

Name of Publisher—The American Mining Congress.

Postoffice address—Washington, D. C. Officers:

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Daniel B. Wentz, First Vice-President, Philadelphia, Pa.

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Thomas T. Brewster, Third Vice-President, St. Louis, Mo.

J. F. Callbreath, Secretary.

Editor—J. F. Callbreath.

Managing Editor—Ira L. Smith.

Business Manager—E. Russell Coombes.

2. That the owners are (give names and addresses of individual owners, or, if a corporation, give its name and the names and addresses of stockholders owning or holding 1 percent or more of the total amount of stock): The American Mining Congress—a corporation, not for profit. No stockholders.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are (if there are none, so state): None.

E. RUSSELL COOMBES,

Business Manager.

Sworn to and subscribed before me this 7th day of October, 1922.

(Seal) F. T. STEPHENSON.

(My commission expires May 4, 1926.)



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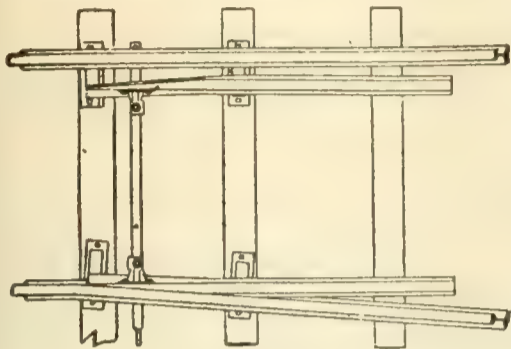
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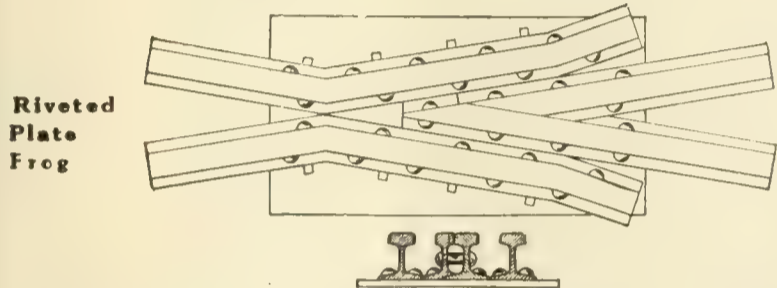
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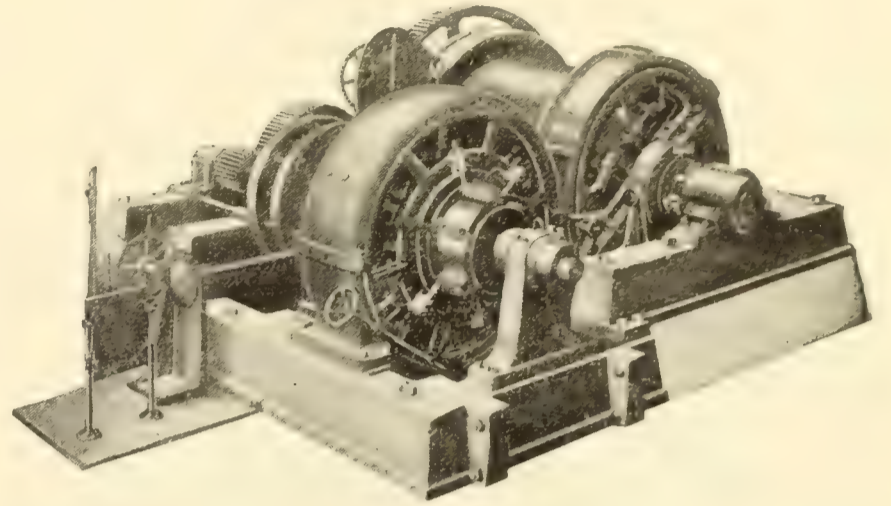
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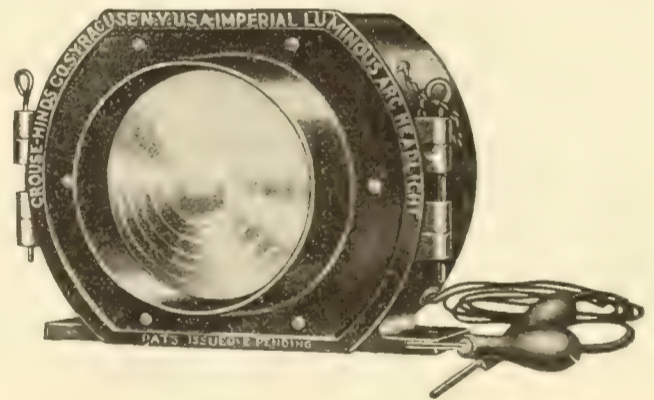
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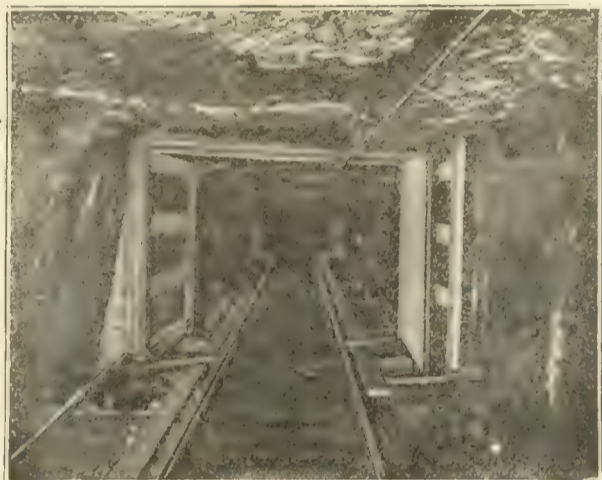
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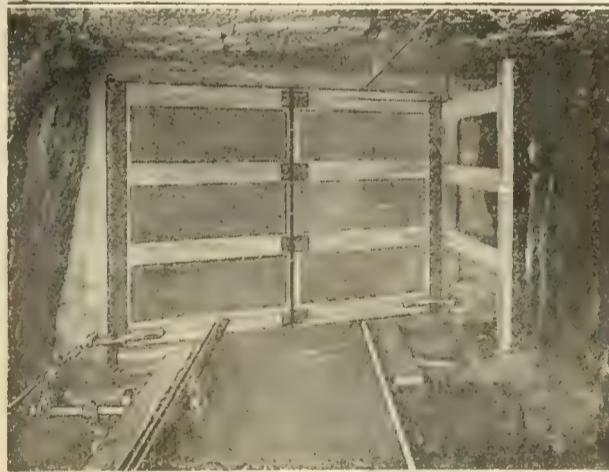
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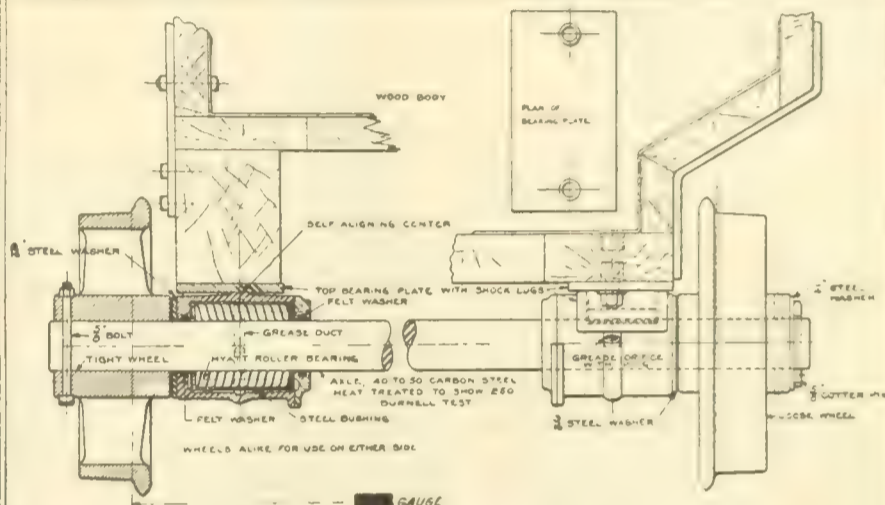
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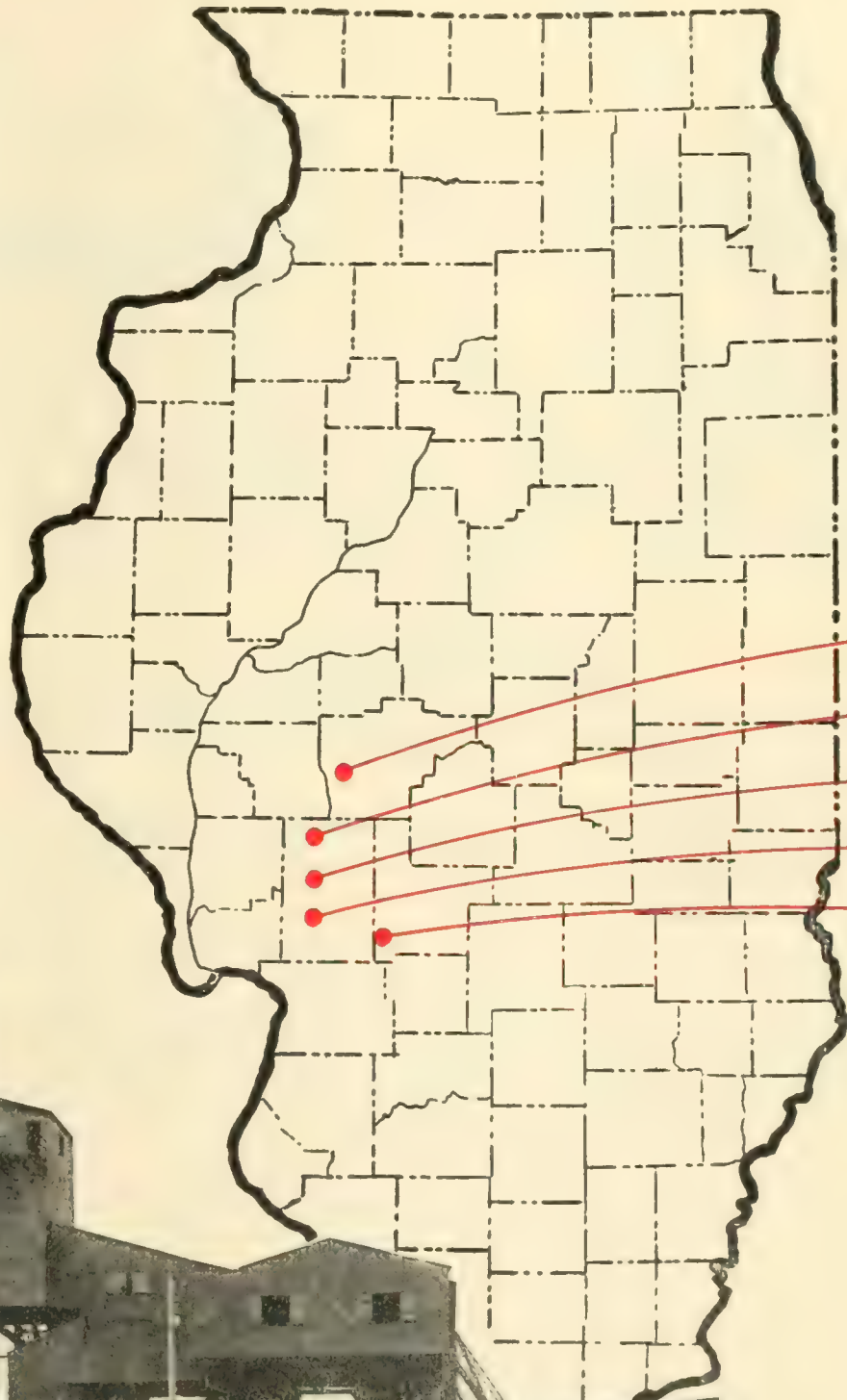
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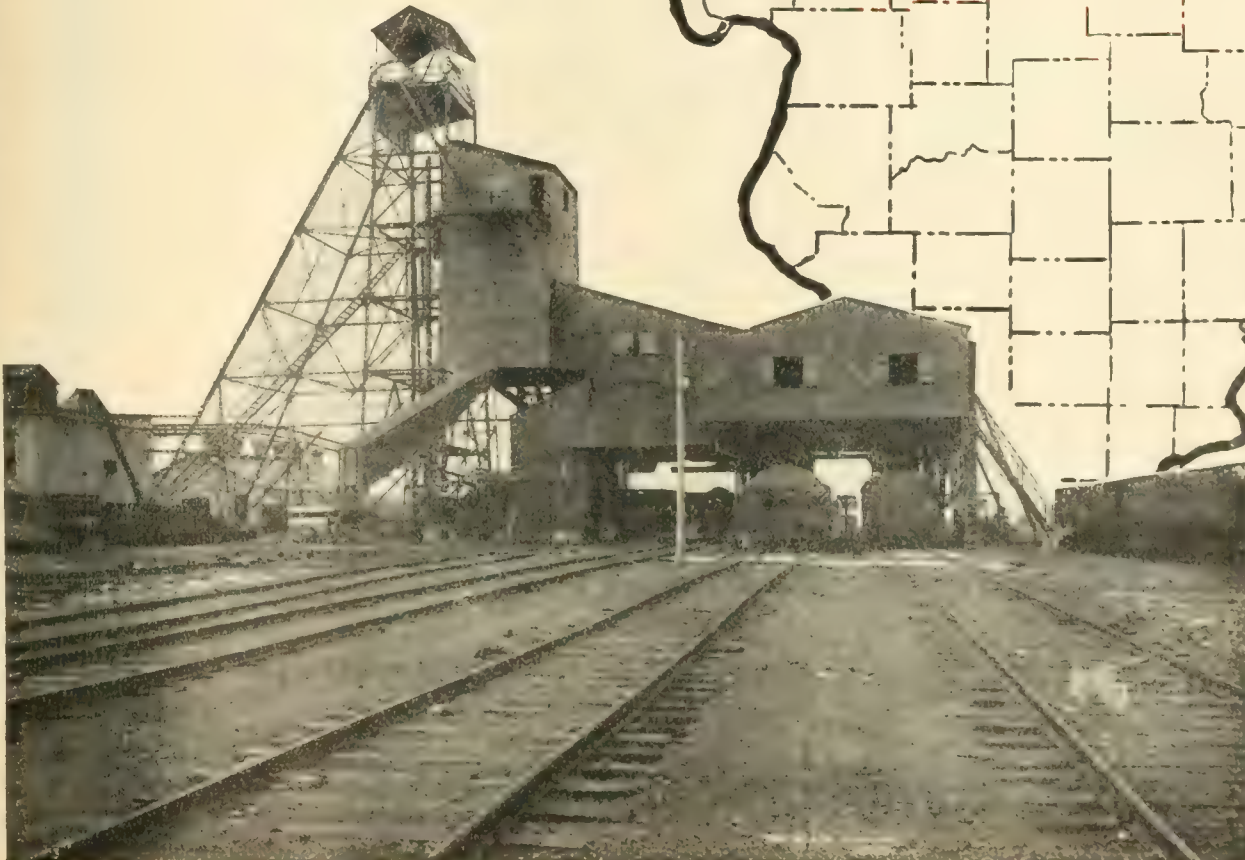
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| | | | |
|--|----------|--|---------|
| Aldrich Pump Company..... | 15 | Lidgerwood Mfg. Company..... | 24 |
| Allis Chalmers Mfg. Co..... | 28 | Linde Air Products Company..... | 43 |
| Ameling Prospecting Co., H. R..... | 47 | Lunckenheimer Company..... | 58 |
| American Cyanamid Co..... | 4 | Magma Copper Company..... | 34 |
| American Mine Door Co..... | 49 | Maher Collieries Company..... | 55 |
| American Steel and Wire Co..... | 30 | Merrick Scale Mfg. Company..... | 38 |
| American Zinc, Lead & Smelting Co..... | 32 | Mexican Petroleum Co., Ltd..... | 25 |
| Anaconda Copper Mining Co..... | 32 | Morse Chain Company..... | 14 |
| Boyle, John..... | 58 | Nason Coal Company..... | 51 |
| Buckeye Blower Company..... | 41 | New York Engineering Company..... | 30 |
| Byers Company, A. M..... | 9 | Ohio Brass Company..... | 47 |
| California Cap Co..... | 65 | Peerless Coal Company..... | 61 |
| Carson Hill Gold Mining Company..... | 35 | Pennsylvania Smelting Company..... | 49 |
| Central Frog and Switch Co..... | 47 | Phelps Dodge Corporation..... | 49 |
| Chaparral Hill Gold Mining Company..... | 31 | Plymouth Consolidated Gold Mining Company..... | 33 |
| Chicago Perforating Co..... | 52 | Rail and River Coal Company..... | 55 |
| Clarkson Coal Mining Co..... | 59 | Redwood Manufacturers Company..... | 38 |
| Clinchfield Fuel Co..... | 59 | Roberts & Schaefer Company..... | 45 |
| Colorado Fuel and Iron Company..... | 57 | Roebbling's Sons Company, John A..... | 19 |
| Connellsville Mfg. and Mine Supply Co..... | 47 | Roessler & Hasslacher Chemical Company..... | 6 |
| Crozer-Pocahontas Coal Co..... | 57 | Scaife & Sons Co., Wm. B..... | 58 |
| Deming Pump Company..... | 12 | Sivyer Steel Casting Company..... | 7 |
| Denver Rock Drill Mfg. Co..... | 3 | S. K. F. Industries..... | 18 |
| Dering Coal Co., J. K..... | 61 | Stonega Coke and Coal Company..... | 53 |
| Dravo Contracting Co..... | 26 | Stonehouse Steel Sign Company..... | 52 |
| du Pont de Nemours & Company, E. I..... | 37 | Streeter-Amet Weighing & Recording Co..... | Cover 2 |
| Federal Electric Company..... | 13 | Taylor Instrument Companies..... | 45 |
| Fleming and Son, J. R..... | 49 | Taylor, S. A..... | 59 |
| General Electric Co..... | 10 | Thorne, Neale & Co..... | 62 |
| Golden-Anderson Valve Specialty Co..... | 8 | Traylor Engineering & Mfg. Co..... | 52 |
| Goodman Mfg. Co..... | 17 | Union Sulphur Company, The..... | 27 |
| Greene-Cananea Copper Company..... | 20 | United Metals Selling Co..... | 34 |
| Hercules Powder Company..... | 39-45 | United Verde Extension Mining Company..... | 21 |
| Hockensmith Wheel and Mine Car Co..... | 45 | Utah Copper Company..... | 36 |
| Hoffman Brothers..... | 58 | Vanadium Corporation of America..... | 29 |
| Holmes and Bros., Robert..... | 24 | Wellman Seaver Morgan Co..... | 26 |
| Hudson Coal Company..... | 22-23 | Weston, Dodson & Co..... | 61 |
| Hunt and Company, Robert W..... | 49 | West Virginia Rail Company..... | 58 |
| Inspiration Consolidated Copper Co..... | 20 | Wholesale Coal Company..... | 59 |
| Ironton Engine Company..... | 58 | Williamsport Wire Rope Company..... | 16 |
| Irvington Smelting & Refining Works..... | 47 | Wilmot Engineering Company..... | 49 |
| Jeffrey Mfg. Co..... | Cover 66 | Wood Shovel and Tool Company..... | 42 |
| Lehigh Coal & Navigation Co..... | 62 | | |
| Leschen & Sons Rope Co., A..... | 28 | | |

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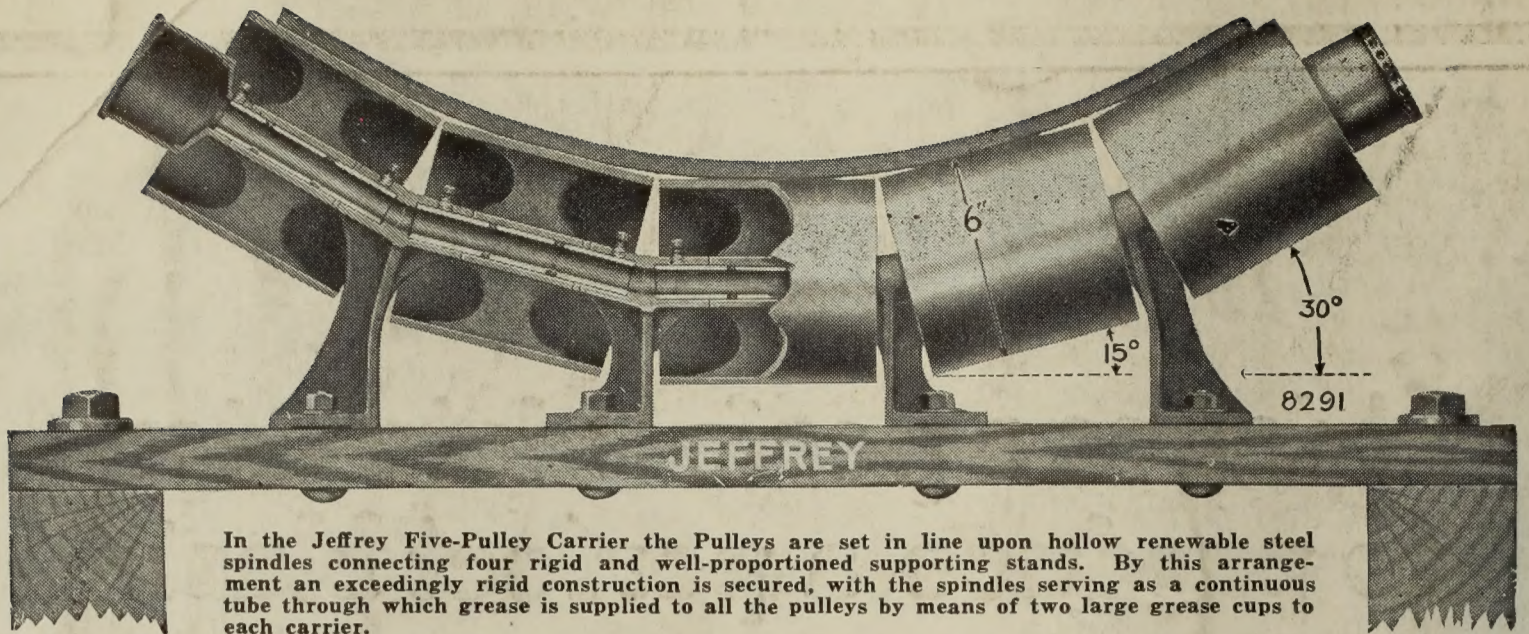


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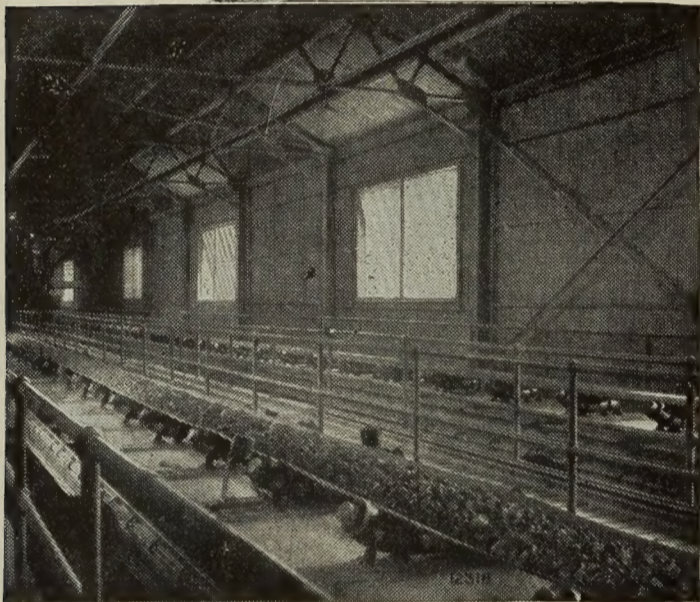
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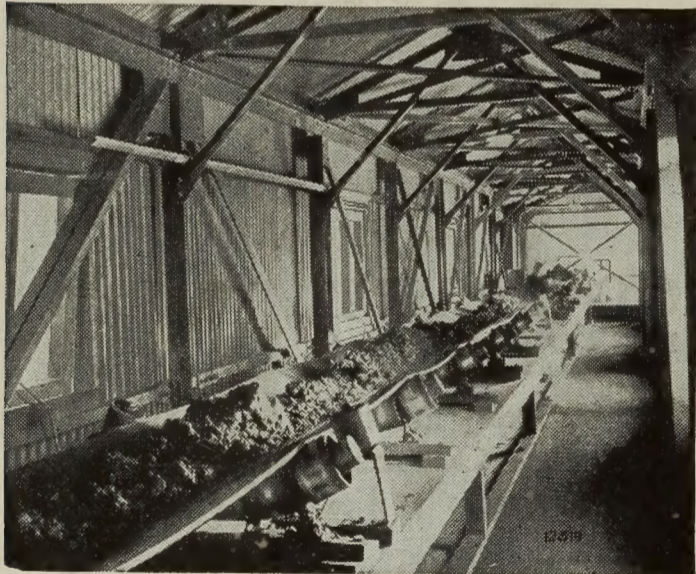
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